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THE

EDINBURGH REVIEW,

APRIL 1805.

NO. XI.

ART. I. *The Lay of the Last Minstrel: a Poem.* By Walter Scott, Esquire. 4to. pp. 318. Edinburgh, Constable & Co. London, Longman & Co. 1805.

WE consider this poem as an attempt to transfer the refinements of modern poetry to the matter and the manner of the ancient metrical romance. The author, enamoured of the lofty visions of chivalry, and partial to the strains in which they were formerly embodied, seems to have employed all the resources of his genius in endeavouring to recall them to the favour and admiration of the public, and in adapting to the taste of modern readers, a species of poetry which was once the delight of the courtly, but has long ceased to gladden any other eyes than those of the scholar and the antiquary. This is a romance, therefore, composed by a minstrel of the present day; or such a romance as we may suppose would have been written in modern times, if that style of composition had continued to be cultivated, and partaken consequently of the improvements which every branch of literature has received since the time of its desertion.

Upon this supposition, it was evidently Mr. Scott's business to retain all that was good, and to reject all that was bad in the models upon which he was to form himself; adding, at the same time, all the interest and the beauty which could possibly be assimilated to the manner and spirit of his original. It was his duty, therefore, to reform the rambling, obscure, and interminable narratives of the ancient romancers—to moderate their digressions,—to abridge or retrench their unmerciful or needless descriptions,—and to expunge altogether those feeble and prosaic passages, the rude stupidity of which is so apt to excite the derision of a modern reader: at the same time he was to rival, if

he could, the force and vivacity of their minute and varied representations—the characteristic simplicity of their pictures of manners—the energy and conciseness with which they frequently describe great events—and the lively colouring and accurate drawing by which they give the effect of reality to every scene they undertake to delineate. In executing this arduous task, he was permitted to avail himself of all that variety of style and manner which had been sanctioned by the ancient practice, and bound to embellish his performance with all the graces of diction and versification which could be reconciled to the simplicity and familiarity of the minstrel's song.

With what success Mr. Scott's efforts have been attended in the execution of this adventurous undertaking, our readers perhaps will be better able to judge in the sequel: but, in the mean time, we may safely venture to assert, that he has produced a very beautiful and entertaining poem, in a style which may fairly be considered as original, and which will be allowed to afford satisfactory evidence of the genius of the author, even though he should not succeed in converting the public to his own opinion as to the interest or dignity of the subject. We are ourselves inclined indeed to suspect that his partiality for the strains of antiquity, has imposed a little upon the severity of his judgment, and impaired the beauty of the present imitation, by directing his attention rather to what was characteristic, than to what was unexceptionable in his originals. Though he has spared too many of their faults, however, he has certainly improved upon their beauties: and while we can scarcely help regretting, that the feuds of Border chieftains should have monopolized as much poetry as might have served to immortalize the whole baronage of the empire, we are the more inclined to admire the interest and magnificence which he has contrived to communicate to a subject so unpromising.

Whatever may be thought of the conduct of the main story, the manner of introducing it must be allowed to be extremely poetical. An aged minstrel, who had 'harped to King Charles the Good,' and learned to love his art at a time when it was honoured by all that was distinguished in rank or in genius, having fallen into neglect and misery in the evil days of the usurpation, and the more frivolous gayeties or bitter contentions of the succeeding reigns, is represented as wandering about the Border in poverty and solitude a few years after the revolution. In this situation, he is driven, by want and weariness, to seek shelter in the castle of the Dutchess of Buccleuch and Monmouth; and being cheered by the hospitality of his reception, offers to sing 'an ancient strain,' relating to the old warriors of her family:

and

and after some fruitless attempts to recall the long-forgotten melody, pours forth 'the Lay of the Last Minstrel,' in six cantos, very skilfully divided by some recurrence to his own situation, and some complimentary interruptions from his noble auditors.

The construction of a fable seems by no means the *forte* of our modern poetical writers: and no great artifice, in that respect, was to be expected, perhaps, from an imitator of the ancient romancers. Mr. Scott, indeed, has himself insinuated, that he considered the story as an object of very subordinate importance, and that he was less solicitous to deliver a regular narrative, than to connect such a series of incidents as might enable him to introduce the manners he had undertaken to delineate, and the imagery with which they were associated. Though the conception of the fable is, probably from these causes, exceedingly defective, it seems necessary to lay a short sketch of it before our readers, both for the gratification of their curiosity, and to facilitate the application of the remarks we may be afterwards tempted to offer.

Sir Walter Scott of Buccleuch, the Lord of Branksome, was slain in a skirmish with the Cars about the middle of the sixteenth century. He left a daughter of matchless beauty, an infant son, and a high-minded dame of a widow, who, though a very virtuous and devout person, was privately addicted to the study of magic, in which she had been initiated by her father. Lord Cranstoun their neighbour was at feud with the whole clan of Scott, but had fallen desperately in love with the daughter, who returned his passion with equal sincerity and ardour, though withheld, by her duty to her mother, from uniting her destiny with his. The poem opens with a description of the warlike establishment of Branksome-hall; and the first incident which occurs, is a dialogue between the *spirits* of the adjoining mountain and river, who, after consulting the stars, declare that no good fortune can ever bless the mansion, 'till pride be quelled, and love be free.' The lady, whose forbidden studies had taught her to understand the language of those speakers, overhears this conversation, and vows, if possible, to retain her purpose in spite of it. She calls a gallant knight of her train, therefore, and directs him to ride immediately to the abbey of Melrose, and there to ask, from the monk of St. Mary's aisle, the mighty book that was hid in the tomb of the wizard Michael Scott. The remainder of the first canto is occupied with the night journey of the warrior. When he delivers his message, the monk appears filled with consternation and terror, but leads him at last through many galleries and chapels to the spot where the wizard was interred, and,

after some account of his life and character, the warrior heaves up the tomb-stone, and is dazzled by the streaming splendour of an ever-burning lamp, which illuminates the sepulchre of the enchanter. With trembling hand he takes the book from the side of the deceased, and hurries home with it in his bosom.

In the mean time, Lord Cranstoun and the lovely Margaret have met at dawn in the woods adjacent to the castle, and are repeating their vows of true love, when they are startled by the approach of a horseman. The lady retreats, and the lover advancing, finds it to be the messenger from Branksome, with whom, as an hereditary enemy, he thinks it necessary to enter immediately into combat. The poor knight, fatigued with his nocturnal adventures, is dismounted at the first shock, and falls desperately wounded to the ground, while Lord Cranstoun, relenting towards the kinsman of his beloved, directs his page to attend him to the castle, and gallops home before any alarm can be given. Lord Cranstoun's page is something unearthly. It is a little mishapen dwarf, whom he found one day when he was hunting, in a solitary glen, and took home with him. It never speaks, except now and then to cry 'Lost! lost! lost!' and is on the whole a hateful, malicious little urchin, with no one good quality but his unaccountable attachment and fidelity to his master. This personage, on approaching the wounded Borderer, discovers the mighty book in his bosom, which he finds some difficulty in opening, and has scarcely had time to read a single spell in it, when he is struck down by an invisible hand, and the clasps of the magic volume shut suddenly more closely than ever. This one spell, however enables him to practise every kind of illusion. He lays the wounded knight on his horse, and leads him into the castle, while the warders see nothing but a wain of hay. He throws him down, unperceived, at the door of the lady's chamber, and turns to make good his retreat. In passing through the court, however, he sees the young heir of Buccleuch at play, and assuming the form of one of his companions, tempts him to go out with him to the woods, where, as soon as they pass a rivulet, he resumes his own shape, and bounds away. The bewildered child is met by two English archers, who make prize of him, and carry him off, while the goblin page returns to the castle, and personates the young baron, to the great annoyance of the whole inhabitants.

The lady finds the wounded knight, and eagerly employs charms for his recovery, that she may learn the story of his disaster. The lovely Margaret, in the mean time, is sitting on her turret, gazing on the western star, and musing on the scenes of the morning, when she discovers the blazing beacons that announce the approach of an English enemy. The alarm is immediately

diately given, and bustling preparation made throughout the mansion for defence. The English force under the command of the Lords Howard and Dacre, speedily appears before the castle, leading with them the young Buccleugh, and propose that the lady should either give up Sir William of Deloraine (who had been her messenger to Melrose,) as having incurred the guilt of march treason, or receive an English garrison within her walls. She answers, with much spirit, that her kinsman will clear himself of the imputation of treason by single combat, and that no foe shall ever get admittance into her fortress. The English Lords, being secretly apprized of the approach of powerful succours to the besieged, agree to the proposal of the combat, and stipulate that the boy shall be restored to liberty or detained in bondage, according to the issue of the battle. The lists are appointed for the ensuing day; and a truce being proclaimed in the mean time, the opposite bands mingle in hospitality and friendship.

Deloraine being wounded, was expected to appear by his champion; and some contention arises for the honour of that substitution. This, however, is speedily terminated by a person in the armour of that warrior, who encounters the English champion, slays him, and leads his captive chieftain to the embraces of his mother. At this moment Deloraine himself appears, half-clothed and unarmed, to claim the combat which has been terminated in his absence, and all flock around the stranger who had personated him so successfully. He unclasps his helmet; and behold! Lord Cranstoun of Teviotside! The lady, overcome with gratitude, and the remembrance of the spirits' prophesy, consents to forego the feud, and to give the fair hand of Margaret to that of the enamoured Baron. The rites of betrothment are then celebrated with great magnificence, and a splendid entertainment given to all the English and Scotish chieftains whom the alarm had assembled at Branksome. Lord Cranstoun's page plays several unlucky tricks during the festival, and breeds some dissention among the warriors. To sooth their ireful mood, the minstrels are introduced, who recite three ballad pieces of considerable merit. Just as their songs are ended, a supernatural darkness spreads itself through the hall, a tremendous flash of lightning and peal of thunder ensue, which break just on the spot where the page had been seated, who is heard to cry 'Found! found! found!' and is no more to be seen, when the darkness clears away. The whole party is chilled with terror at this extraordinary incident; and Deloraine protests that he distinctly saw the figure of the ancient wizard Michael Scott in the middle of the lightning. The lady renounces for ever the unhallowed study of magic; and all the chieftains, struck with awe and consternation, vow to make a pilgrimage

grimage to Melrose to implore rest and forgiveness for the spirit of the departed sorcerer. With the description of this ceremony the minstrel closes his 'Lay.'

From this little sketch of the story, our readers will easily perceive, that, however well calculated it may be for the introduction of picturesque imagery, or the display of extraordinary incident, it has but little pretension to the praise of a regular or coherent narrative. The magic of the lady, the midnight visit to Melrose, and the mighty book of the enchanter, which occupy nearly one third of the whole poem, and engross the attention of the reader for a long time after the commencement of the narrative, are of no use whatsoever in the subsequent developement of the fable, and do not contribute, in any degree, either to the production or explanation of the incidents that follow. The whole character and proceedings of the goblin page, in like manner, may be considered as merely episodical; for though he is employed in some of the subordinate incidents, it is remarkable that no material part of the fable requires the intervention of supernatural agency. The young Buccleuch might have wandered into the wood, although he had not been decoyed by a goblin; and the dame might have given her daughter to the deliverer of her son, although she had never listened to the prattlement of the river and mountain spirits. There is, besides all this, a great deal of gratuitous and digressive description, and the whole sixth canto may be said to be redundant. The story naturally concludes with the union of the lovers; and the account of the feast, and the minstrelsy that solemnized their betrothment, is a sort of epilogue, superadded after the catastrophe is complete.

But though we feel it to be our duty to point out these obvious defects in the structure of the fable, we have no hesitation in conceding to the author, that the fable is but a secondary consideration in performances of this nature. A poem is intended to please by the images it suggests, and the feelings it inspires; and if it contain delightful images and affecting sentiments, our pleasure will not be materially impaired by some slight want of probability or coherence in the narrative by which they are connected. The *callida junctura* of its members is a grace, no doubt, which ought always to be aimed at; but the quality of the members themselves is a consideration of far higher importance, and that by which alone the character of the work must be ultimately decided. The adjustment of a fable may indicate the industry or the judgment of the writer, but the genius of the poet can only be shown in his management of its successive incidents. In these more essential particulars, Mr. Scott's merits, we think, are unequivocal: he writes throughout

throughout with the spirit and the force of a poet; and though he occasionally discovers a little too much, perhaps, of the 'brave neglect,' and is frequently inattentive to the delicate propriety and scrupulous correctness of his diction, he compensates for those defects by the fire and animation of his whole composition, and the brilliant colouring and prominent features of the figures with which he has enlivened it. We shall now proceed to lay before our readers some of the passages which have made the greatest impression on our own minds, subjoining, at the same time, such observations as they have most forcibly suggested.

In the very first rank of poetical excellence, we are inclined to place the introductory and concluding lines of every canto, in which the ancient strain is suspended, and the feelings and situation of the minstrel himself described in the words of the author. The elegance and the beauty of this *setting*, if we may so call it, though entirely of modern workmanship, appears to us to be fully more worthy of admiration than the bolder relief of the antiques which it encloses, and leads us to regret that the author should have wasted, in imitation and antiquarian researches, so much of those powers which seem fully equal to the task of raising him an independent reputation. In confirmation of these remarks, we give a considerable part of the introduction to the whole poem.

'The way was long, the wind was cold,
The Minstrel was infirm and old;
His withered cheek, and tresses gray,
Seemed to have known a better day;
The harp, his sole remaining joy,
Was carried by an orphan boy.
The last of all the Bards was he,
Who sung of Border chivalry;
For, well-a-day! their date was fled,
His tuneful brethren all were dead;
And he, neglected and oppressed,
Wished to be with them, and at rest.
No more, on prancing palfrey borne,
He carolled, light as lark at morn;
No longer, courted and caressed,
High placed in hall, a welcome guest,
He poured, to lord and lady gay,
The unpremeditated lay;
Old times were changed, old manners gone,
A stranger filled the Stuart's throne;
The bigots of the iron time
Had called his harmless art a crime.
A wandering harper, scorned and poor,

He

He begged his bread from door to door;
And tuned, to please a peasant's ear,
The harp, a King had loved to hear.' p. 3–4.

After describing his introduction to the presence of the Dutchess, and his offer to entertain her with his music, the description proceeds,

'The humble boon was soon obtained;
The aged Minstrel audience gained.
But, when he reached the room of state,
Where she, with all her ladies, sate,
Perchance he wished his boon denied;
For, when to tune his harp he tried,
His trembling hand had lost the ease
Which marks security to please;
And scenes, long past, of joy and pain,
Came wildering o'er his aged brain—
Amid the strings his fingers strayed,
And an uncertain warbling made—
And oft he shook his hoary head.
But when he caught the measure wild,
The old man raised his face, and smiled;
And lightened up his faded eye,
With all a poet's ecstasy!
In varying cadence, soft or strong,
He swept the sounding chords along;
The present scene, the future lot,
His toils, his wants, were all forgot;
Cold diffidence, and age's frost,
In the full tide of song were lost.
Each blank, in faithless memory void,
The poet's glowing thought supplied;
And, while his harp responsive rung,
'Twas thus the LATEST MINSTREL sung.' p. 6–8.

We add, chiefly on account of their brevity, the following lines, which immediately succeed the description of the funeral rites of the English champion.

'The harp's wild notes, though hushed the song,
The mimic march of death prolong;
Now seems it far, and now a-near,
Now meets, and now eludes the ear;
Now seems some mountain's side to sweep,
Now faintly dies in valley deep;
Seems now as if the Minstrel's wail,
Now the sad requiem loads the gale;
Last, o'er the warrior's closing grave,
Rung the full choir in choral stave.' p. 155–156.

The

The close of the whole poem is as follows:

'Hushed is the harp—the Minstrel gone.
And did he wander forth alone?
Alone, in indigence and age,
To linger out his pilgrimage?
No—close beneath proud Newark's tower,
Arose the Minstrel's lowly bower;
A simple hut; but there was seen
The little garden hedged with green,
The cheerful hearth, and lattice clean.
There sheltered wanderers, by the blaze,
Oft heard the tale of other days;
For much he loved to ope his door,
And give the aid he begged before.
So passed the winter's day—but still,
When summer smiled on sweet Bowhill,
And July's eve, with balmy breath,
Waved the blue-bells on Newark heath;
And flourished, broad, Blackandro's oak,
The aged Harper's soul awoke!
Then would he sing achievements high,
And circumstance of Chivalry,
Till the rapt traveller would stay,
Forgetful of the closing day;
And Yarrow, as he rolled along,
Bore burden to the Minstrel's song.' p. 193–4.

Besides these, which are altogether detached from the lyric effusions of the minstrel, some of the most interesting passages of the poem are those in which he drops the business of his story, to moralize, and apply to his own situation the images and reflections it has suggested. After concluding one canto with an account of the warlike array which was prepared for the reception of the English invaders, he opens the succeeding one with the following beautiful verses:

'Sweet Teviot! on thy silver tide,
The glaring bale-fires blaze no more;
No longer steel-clad warriors ride
Along thy wild and willowed shore;
Where'er thou wind'st by dale or hill,
All, all is peaceful, all is still,
As if thy waves, since Time was born,
Since first they rolled their way to Tweed,
Had only heard the shepherd's reed,
Nor started at the bugle-horn.

Unlike the tide of human time,
Which, though it change in ceaseless flow,

Retains

Retains each grief, retains each crime,
Its earliest course was doomed to know;
And, darker as it downward bears,
Is stained with past and present tears.
Low as that tide has ebbed with me,
It still reflects to memory's eye
The hour, my brave, my only boy,
Fell by the side of great Dundee.
Why, when the volleying musket played
Against the bloody Highland blade,
Why was not I beside him laid!—
Enough—he died the death of fame;
Enough—he died with conquering Græme.' p. 93, 94.

There are several other detached passages of equal beauty, which might be quoted in proof of the effect which is produced by this dramatic interference of the narrator; but we hasten to lay before our readers some of the more characteristic parts of the performance.

The ancient romance owes much of its interest to the lively picture which it affords of the times of chivalry, and of those usages, manners and institutions which we have been accustomed to associate in our minds, with a certain combination of magnificence with simplicity, and ferocity with romantic honour. The representations contained in those performances, however, are for the most part too rude and naked to give complete satisfaction. The execution is always extremely unequal; and though the writer sometimes touches upon the appropriate feeling with great effect and felicity, still this appears to be done more by accident than design; and he wanders away immediately into all sorts of ludicrous or uninteresting details, without any apparent consciousness of incongruity. These defects Mr. Scott has corrected with admirable address and judgment in the greater part of the work now before us: and while he has exhibited a very striking and impressive picture of the old feudal usages and institutions, he has shown still greater talent in ingrafting upon those descriptions all the tender or magnanimous emotions to which the circumstances of the story naturally give rise. Without impairing the antique air of the whole piece, or violating the simplicity of the ballad style, he has contrived, in this way, to impart a much greater dignity, and more powerful interest to his production, than could ever be attained by the unskilful and unsteady delineations of the old romancers. Nothing, we think, can afford a finer illustration of this remark, than the opening stanzas of the whole poem; they transport us at once into the days of knightly daring and

and feudal hostility, at the same time that they suggest, in a very interesting way, all those softer sentiments which arise out of some parts of the description.

'The feast was over in Branksome tower,
And the Ladye had gone to her secret bower;
Her bower, that was guarded by word and by spell,
Deadly to hear, and deadly to tell—
Jesu Maria, shield us well!
No living wight, save the Ladye alone,
Had dared to cross the threshold stone.

The tables were drawn, it was idlesse all;
Knight, and page, and household squire,
Loitered through the lofty hall,
Or crowded round the ample fire.
The stag-hounds, weary with the chase,
Lay stretched upon the rushy floor,
And urged, in dreams, the forest race,
From Teviot-stone to Eskdale-moor.' p. 9, 10.

After a very picturesque representation of the military establishment of this old baronial fortress, the minstrel proceeds:

'Many a valiant knight is here;
But he, the Chieftain of them all,
His sword hangs rusting on the wall,
Beside his broken spear.
Bards long shall tell,
How Lord Walter fell!
When startled burghers fled, afar,
The furies of the Border war:
When the streets of high Dunedin
Saw lances gleam, and falchions redden,
And heard the slogan's deadly yell—
Then the Chief of Branksome fell.

Can piety the discord heal,
Or staunch the death-feud's enmity?
Can Christian lore, can patriot zeal,
Can love of blessed charity?
No! vainly to each holy shrine,
In mutual pilgrimage they drew;
Implored, in vain, the grace divine
For chiefs, their own red falchions slew.
While Cessford owns the rule of Car,
While Ettrick boasts the line of Scott,
The slaughtered chiefs, the mortal jar,
The havoc of the feudal war,
Shall never, never be forgot!

In

In sorrow o'er Lord Walter's bier,
The warlike foresters had bent;
And many a flower and many a tear,
Old Teviot's maids and matrons lent:
But, o'er her warrior's bloody bier,
The Ladye dropped nor sigh nor tear!
Vengeance, deep-brooding o'er the slain,
Had locked the source of softer wo:
And burning pride, and high disdain,
Forbade the rising tear to flow;
Until, amid his sorrowing clan,
Her son lisped from the nurse's knee—
"And, if I live to be a man,
"My father's death revenged shall be!"
Then fast the mother's tears did seek
To dew the infant's kindling cheek.' p. 12—15.

There are not many passages in English poetry more impressive than some parts of this extract. As another illustration of the prodigious improvement which the style of the old romance is capable of receiving from a more liberal admixture of pathetic sentiments and gentle affections, we insert the following passage, where the effect of the picture is finely assisted by the contrast of its two compartments.

'So passed the day—the evening fell,
'Twas near the time of curfew bell;
The air was mild, the wind was calm,
The stream was smooth, the dew was balm;
E'en the rude watchman, on the tower,
Enjoyed and blessed the lovely hour.
Far more fair Margaret loved and blessed
The hour of silence and of rest.
On the high turret, sitting lone,
She waked at times the lute's soft tone:
Touched a wild note, and all between
Thought of the bower of hawthorns green;
Her golden hair streamed free from band,
Her fair cheek rested on her hand,
Her blue eyes sought the west afar,
For lovers love the western star.

'Is yon the star o'er Penchryst-Pen,
That rises slowly to her ken,
And, spreading broad its wavering light,
Shakes its loose tresses on the night?
Is yon red glare the western star,—
O, 'tis the beacon-blaze of war!

Scarce

Scarce could she draw her tightened breath;
For well she knew the fire of death!

'The warder viewed it blazing strong,
And blew his war-note loud and long,
Till, at the high and haughty sound,
Rock, wood and river, rung around;
The blast alarmed the festal hall,
And startled forth the warriors all;
Far downward in the castle-yard,
Full many a torch and cresset glared:
And helms and plumes, confusedly tossed,
Were in the blaze half seen, half lost;
And spears in wild disorder shook,
Like reeds beside a frozen brook.

'The Seneschal, whose silver hair
Was reddened by the torches' glare,
Stood in the midst, with gesture proud,
And issued forth his mandates loud—
"On Penchryst glows a bale of fire,
And three are kindling on Priesthaughswire," &c. p. 83–85.

In these passages, the poetry of Mr. Scott is entitled to a decided preference over that of the earlier minstrels, not only from the greater consistency and condensation of his imagery, but from an intrinsic superiority in the nature of his materials. From the improvement of taste, and the cultivation of the finer feelings of the heart, poetry acquires, in a refined age, many new and invaluable elements, which are necessarily unknown in a period of greater simplicity. The description of external objects, however, is at all times equally inviting, and equally easy; and many of the pictures which have been left by the ancient romancers, must be admitted to possess, along with great diffuseness and homeliness of diction, an exactness and vivacity which cannot be easily exceeded. In this part of his undertaking, Mr. Scott therefore had fewer advantages; but we do not think that his success has been less remarkable. In the following description of Melrose, which introduces the second canto, the reader will observe how skilfully he calls in the aid of sentimental associations to heighten the effect of the picture which he presents to the eye.

'If thou would'st view fair Melrose aright,
Go visit it by the pale moon-light:
For the gay beams of lightsome day
Gild, but to flout, the ruins gray.
When the broken arches are black in night,
And each shafted oriel glimmers white;

When

When the cold light's uncertain shower
Streams on the ruined central tower;
When buttress and buttress, alternately,
Seem framed of ebon and ivory;
When silver edges the imagery,
And the scrolls that teach thee to live and die;
When distant Tweed is heard to rave,
And the owlet to hoot o'er the dead man's grave:
Then go—but go alone the while—
Then view St. David's ruined pile;
And home returning, soothly swear,
Was never scene so sad and fair!' p. 35, 36.

In the following passage he is less ambitious, and confines himself, as an ancient minstrel would have done on the occasion, to a minute and picturesque represensation of the visible object before him.

'When for the list they sought the plain,
The stately Ladye's silken rein
Did noble Howard hold;
Unarmed by her side he walked,
And much in courteous phrase, they talked
Of feats of arms of old.
Costly his garb—his Flemish ruff
Fell o'er his doublet shaped of buff,
With satin slashed, and lined;
Tawny his boot, and gold his spur,
His cloak was all of Poland fur,
His hose with silver twined;
His Bilboa blade, by Marchmen felt,
Hung in a broad and studded belt;
Hence, in rude phrase, the Borderers still
Called noble Howard, Belted Will.' p. 141.

The same scrupulous adherence to the style of the old romance, though greatly improved in point of brevity and selection, is discernible in the following animated description of the feast, which terminates the poem.

'The spousal rites were ended soon:
'Twas now the merry hour of noon,
And in the lofty-arched hall
Was spread the gorgeous festival:
Steward and squire, with heedful haste,
Marshalled the rank of every guest;
Pages, with ready blade, were there,
The mighty meal to carve and share.
O'er capon, heron-shew, and crane,
And princely peacock's gilded train,

And

And o'er the boar's-head, garnished brave,
And cygnet from St. Mary's wave;
O'er ptarmigan and venison,
The priest had spoke his benison.
Then rose the riot and the din,
Above, beneath, without, within!
For, from the lofty balcony,
Rung trumpet, shalm, and psaltery;
Their clanging bowls old warriors quaffed,
Loudly they spoke, and loudly laughed;
Whispered young knights, in tone more mild,
To ladies fair, and ladies smiled.
The hooded hawks, high perched on beam,
The clamour joined with whistling scream,
And flapped their wings, and shook their bells,
In concert with the stag-hounds' yells.
Round go the flasks of ruddy wine,
From Bourdeaux, Orleans, or the Rhine;
Their tasks the busy sewers ply,
And all is mirth and revelry.' p. 166–7.

The following picture is sufficiently antique in its conception, but the execution is evidently modern.

'Ten of them were sheathed in steel,
With belted sword, and spur on heel:
They quitted not their harness bright,
Neither by day, nor yet by night:
They lay down to rest
With corslet laced,
Pillowed on buckler cold and hard;
They carved at the meal
With gloves of steel,
And they drank the red wine through the helmet barred.'

The whole scene of the duel or judicial combat, is conducted according to the strict ordinances of chivalry, and delineated with all the minuteness of an ancient romancer. The modern reader will probably find it rather tedious; all but the concluding stanzas, which are in a loftier measure.

'"Tis done, 'tis done! that fatal blow
Has stretched him on the bloody plain;
He strives to rise—Brave Musgrave, no!
Thence never shalt thou rise again!
He chokes in blood—Some friendly hand
Undo the visor's barred band,
Unfix the gorget's iron clasp,
And give him room for life to gasp!–

In

In vain, in vain—haste, holy friar,
Haste, ere the sinner shall expire!
Of all his guilt let him be shriven,
And smooth his path from earth to heaven.

In haste the holy friar sped,
His naked foot was dyed with red,
As through the lists he ran;
Unmindful of the shouts on high,
That hailed the conqueror's victory,
He raised the dying man;
Loose waved his silver beard and hair,
As o'er him he kneeled down in prayer.
And still the crucifix on high,
He holds before his darkening eye,
And still he bends an anxious ear,
His faltering penitence to hear;
Still props him from the bloody sod,
Still, even when soul and body part,
Pours ghostly comfort on his heart,
And bids him trust in God!
Unheard he prays; 'tis o'er, 'tis o'er!
Richard of Musgrave breathes no more.' p. 145–47.

We have already made so many extracts from this poem, that we can now only afford to present our readers with one specimen of the songs which Mr. Scott has introduced in the mouths of the minstrels, in the concluding canto. It is his object, in these pieces, to exemplify the different styles of ballad narrative which prevailed in this island at different periods, or in different conditions of society. The first is constructed upon the rude and simple model of the old Border ditties, and produces its effect by the direct and concise narrative of a tragical occurrence. The second, sung by Fitztraver, the bard of the accomplished Surrey, has more of the richness and polish of the Italian poetry, and is very beautifully written in a stanza resembling that of Spenser. The third is intended to represent that wild style of composition which prevailed among the bards of the northern continent, somewhat softened and adorned by the minstrel's residence in the south. We prefer it, upon the whole, to either of the two former, and shall give it entire to our readers, who will probably be struck with the poetical effect of the dramatic form into which it is thrown, and of the indirect description by which every thing is most expressively told, without one word of distinct narrative.

'O listen, listen, ladies gay!
No haughty feat of arms I tell;

Soft

Soft is the note, and sad the lay,
That mourns the lovely Rosabelle.
—"Moor, moor the barge, ye gallant crew!
And, gentle ladye, deign to stay!
Rest thee in Castle Ravensheuch,
Nor tempt the stormy frith to-day.
"The blackening wave is edged with white;
To inch * and rock the sea-mews fly; * Isle.
The fishers have heard the Water-Sprite,
Whose screams forebode that wreck is nigh.
"Last night the gifted seer did view
A wet shroud rolled round ladye gay;
Then stay thee, fair, in Ravensheuch:
Why cross the gloomy frith to-day?"—
—"'Tis not because Lord Lindesay's heir
To-night at Roslin leads the ball,
But that my ladye-mother there
Sits lonely in her castle-hall.
"'Tis not because the ring they ride,
And Lindesay at the ring rides well,
But that my sire the wine will chide,
If 'tis not filled by Rosabelle."—
O'er Roslin all that dreary night
A wondrous blaze was seen to gleam;
'Twas broader than the watch-fire light,
And brighter than the bright moon-beam.
It glared on Roslin's castled rock,
It reddened all the copse-wood glen;
'Twas seen from Dryden's groves of oak,
And seen from caverned Hawthornden.
Seemed all on fire that chapel proud,
Where Roslin's chiefs uncoffined lie;
Each Baron, for a sable shroud,
Sheathed in his iron panoply.
Seemed all on fire within, around,
Both vaulted crypt and altar's pale;
Shone every pillar foliage-bound,
And glimmered all the dead-men's mail.
Blazed battlement and pinnet high,
Blazed every rose-carved buttress fair—
So still they blaze when fate is nigh
The lordly line of high St. Clair.
There are twenty of Roslin's barons bold
Lie buried within that proud chapelle;
Each one the holy vault doth hold—
But the sea holds lovely Rosabelle!
And each St. Clair was buried there,

With candle, with book, and with knell;
But the Kelpy rung, and the Mermaid sung
The dirge of lovely Rosabelle.' p. 181–184.

From the various extracts we have now given, our readers will be enabled to form a tolerably correct judgment of this poem; and if they are pleased with those portions of it which have now been exhibited, we may venture to assure them that they will not be disappointed by the perusal of the whole. The whole night-journey of Deloraine—the opening of the wizard's tomb—the march of the English battle—and the parley before the walls of the castle, are all executed with the same spirit and poetical energy, which we think is conspicuous in the specimens we have already extracted: and a great variety of short passages occurs in every part of the poem, which are still more striking and meritorious, though it is impossible to detach them, without injury, in the form of a quotation. It is but fair to apprise the reader, on the other hand, that he will meet with very heavy passages, and with a variety of details which are not likely to interest any one but a Borderer or an antiquary. We like very well to hear 'of the Gallant Chief of Otterburne,' or 'the Dark Knight of Liddesdale,' and feel the elevating power of great names, when we read of the tribes that mustered to the war, 'beneath the crest of old Dunbar, and Hepburn's mingled banners.' But we really cannot so far sympathise with the local partialities of the author, as to feel any glow of patriotism or ancient virtue in hearing of the *Todrig* or *Johnston* clans, or of *Elliots, Armstrongs,* and *Tinlinns;* still less can we relish the introduction of *Black John of Athelstane, Whitslade the Hawk, Arthur-fire-the-braes, Red Roland Forster,* or any other of those worthies who

'Sought the beeves that made their broth,
In Scotland and in England both,'

into a poem which has any pretensions to seriousness or dignity. The ancient metrical romance might have admitted these homely personalities; but the present age will not endure them; and Mr. Scott must either sacrifice his Border prejudices, or offend all his readers in the other parts of the empire.

There are many passages, as we have already insinuated, which have the general character of heaviness, such as the minstrel's account of his preceptor, and Deloraine's lamentation over the dead body of Musgrave: but the goblin page is, in our opinion, the capital deformity of the poem. We have already said that the whole machinery is useless; but the magic studies of the lady, and the rifled tomb of Michael Scott, give occasion to so much admirable poetry, that we can on no account consent to part with them.

them. The page, on the other hand, is a perpetual burden to the poet, and to the reader: it is an undignified and improbable fiction, which excites neither terror, admiration, nor astonishment, but needlessly debases the strain of the whole work, and excites at once our incredulity and contempt. He is not a 'tricksy spirit,' like Ariel, with whom the imagination is irresistibly enamoured; nor a tiny monarch, like Oberon, disposing of the destinies of mortals: he rather appears to us to be an awkward sort of a mongrel between Puck and Caliban, of a servile and brutal nature, and limited in his powers to the indulgence of petty malignity and the infliction of despicable injuries. Besides this objection to his character, his existence has no support from any general or established superstition. Fairies and devils, ghosts, angels and witches, are creatures with whom we are all familiar, and who excite in all classes of mankind emotions with which we can easily be made to sympathize. But the story of Gilpin Horner was never believed out of the village where he is said to have made his appearance, and has no claims upon the credulity of those who were not originally of his acquaintance. There is nothing at all interesting or elegant in the scenes of which he is the hero; and in reading these passages, we really could not help suspecting that they did not stand in the romance when the aged minstrel recited it to the royal Charles and his mighty earls, but were inserted afterwards to suit the taste of the cottagers among whom he begged his bread on the Border. We entreat Mr. Scott to inquire into the grounds of this suspicion, and to take advantage of any decent pretext he can lay hold of for purging 'the Lay' of this ungraceful intruder. We would also move for a *Quo Warranto* against the spirits of the river and the mountain; for though they are come of a very high lineage, we do not know what lawful business they could have at Branksome castle in the year 1550.

Of the diction of this poem we have but little to say. From the extracts we have already given, our readers will perceive that the versification is in the highest degree irregular and capricious. The nature of the poem entitled Mr. Scott to some license in this respect, and he often employs it with a very pleasing effect; but he has frequently exceeded its just measure, and presented us with such combinations of metre, as must put the teeth of his readers, we think, into some jeopardy. He has, when he pleases, a very melodious and sonorous style of versification, but often composes with inexcusable negligence and rudeness. There is a great number of lines in which the verse can only be made out by running the words together in a very unusual manner; and some appear to us to have no pretension to the name of verses at all.

What apology, for instance, will Mr. Scott make for the last of these two lines—

'For when in studious mood he paced
St. Kentigern's hall.'

Or for these—

'How the brave boy, in future war,
Should tame the unicorn's pride.

We have called the negligence which could leave such lines as these in a poem of this nature, inexcusable; because it is perfectly evident, from the general strain of his composition, that Mr. Scott has a very accurate ear for the harmony of versification, and that he composes with a facility which must lighten the labour of correction. There are some smaller faults in the diction which might have been as well corrected also; there is too much alliteration; and he reduplicates his words too often. We have 'never, never,' several times; besides, 'tis o'er, 'tis o'er,'—'in vain, in vain'—'tis done, 'tis done;' and several other echoes as ungraceful.

We will not be tempted to say any thing more of this poem. Although it does not contain any great display of what is properly called invention, it indicates perhaps as much vigour and originality of poetical genius as any performance which has been lately offered to the public. The locality of the subject is likely to obstruct its popularity; and the author, by confining himself in a great measure to the description of manners and personal adventures, has forfeited the attraction which might have been derived from the delineation of rural scenery. But he has manifested a degree of genius which cannot be overlooked, and given indication of talents that seem well worthy of being enlisted in the service of the epic muse.

The notes, which contain a great treasure of Border history and antiquarian learning, are too long, we think, for the general reader. The form of the publication is also too expensive; and we hope soon to see a smaller edition, with an abridgment of the notes, for the use of the mere lovers of poetry.

ART. II. *Indagine Fisica su i Colori; coronata del premio dalla Societa Italiana di Scienze.* Di Giambattista Venturi, Prof. di Fisica e Presidente del Gabinetto Fisico nell' Univ. di Pavia, della Soc. Ital. di Scienze, &c. &c. &c. Edizione seconda, accresciuta. Modena, An x. Rep. (1801) 8vo.

THE science of Optics, which in the earlier part of the last century occupied so much of the attention of physical inquirers,

ers, has of late years yielded its rank, in the estimation of natural philosophers, to the easier, and, perhaps, in themselves more interesting pursuits of the Pneumatic Chemistry. As long as the latter science can be studied without a previous familiarity with the Mathematics, it is to be feared that the high price which must be paid for the delights of the former, will decide mankind to remain in their present state of indifference to its attractions. They will continue to praise the name of Newton for his immortal discoveries in this branch of knowledge, without once trying to estimate his merits; as they have from the beginning worshipped the author of the *Principia*, without ever imagining that it was a work which was written to be read.

That the knowledge which the '*Treatise of Light*' left us of the subtle element which apparently pervades all finite space, should, under such circumstances, not have been sensibly augmented since his day, will scarcely appear surprising. In some parts of Europe, however, his sublime researches appear to have attracted more attention than in those where we live. The Italian mathematicians have pursued the investigations left unfinished by him, with an ardour and a success unknown in this country. The two inestimable treatises of Comparetti (not to mention the works of Beccaria) present us with discoveries not less important than those of the opticians who preceded Sir Isaac Newton. We refer our readers in particular to his work '*de Luce inflexa et Coloribus*,' published at Ferrara in 1787.* It contains matter which deserves a place in the '*Optics*' itself; and only requires to be somewhat extended and pursued in all its consequences, in order to furnish some future philosopher with as ample materials for new discovery, as Newton obtained from the great work of Grimaldi.

The treatise of Professor Venturi, which is now before us, though much inferior in originality and richness of experiment to the book just now mentioned, is nevertheless a very valuable accession to optical science. It consists of a memoir deservedly crowned by the *Societa Italiana*, and an additional chapter of great merit. There is an ingenious essay added, '*On the means by which we judge of space from the sense of hearing*.' This we reserve for another opportunity, and proceed to consider, with some fulness, the optical work.

I. The author begins with a very clear and accurate statement of Sir Isaac Newton's fundamental experiment on the colours

* His other work on *Vision and Colours as connected with it*, was published in 1798; since which time the author died.

lours of thin plates. He then describes the manner in which Du Tour endeavoured to explain this leading phenomenon. That optician conceived the rings of colours and alternate dark intervals to be the result of a simple prismatic refraction. He supposed that the first lens acted like a prism, and separated the incident hetrogeneous rays, so as to form a coloured spectrum on the second, from whence it was reflected to the eye placed above both. Professor Venturi adduces no less than five different proofs to shew the insufficiency of this theory. Yet, among all these, it is not a little singular that he omits the most conclusive and the most obvious, viz. the multiplicity of the rings, and the existence of the dark intervals. If common prismatic refraction could produce one image at all resembling a coloured ring in size or position (which it very certainly never could,) we should still be at a loss to know whence the succeeding black ring comes, and whence the second coloured ring proceeds; not to mention the coincidence of the coloured rings by transmission with those black spaces by reflection, and of the black spaces by transmission with the coloured rings by reflexion. Indeed, it may fairly be conjectured, that he who could propose such an explanation, had neither seen the appearance in question, nor formed any thing like a precise idea of it from Sir Isaac Newton's description: the two phenomena are more dissimilar, in every respect, than the colours of thin plates and those of the prismatic spectrum. We have one other remark to offer on this part of our author's inquiry. He asserts that the term '*fits of easy and of difficult transmission*,' only expresses a fact, and is not of hypothetical origin. It is unquestionably true, that this expression refers to a fact; but it refers to it in a manner purely theoretical; it accounts for, or explains the fact in a way not strictly prescribed by the circumstances, and capable of infinite variations, though those circumstances should remain the same. Nothing, indeed, is advanced repugnant to the phenomenon; but other solutions would agree equally well with it. The problem, for want of sufficient data, is beyond a certain point, indeterminate; and one of its many solutions has been adopted. All that the facts warrant us to assert is, that plates of a particular thickness reflect, while those of another degree of thickness transmit light; and that those degrees of thickness which transmit, and those which reflect, succeed each other at certain intervals, the one being as the odd, the other as the even numbers in an arithmetical series. But if we proceed a step farther, and resolve this fact into a transient quality impressed upon the rays of light, which disposes them at one part of their route to be reflected, at another to be transmitted, we surely do something

thing more than merely express the fact on which all these speculations are founded, viz. the connexion (of what sort we are ignorant) between a certain thickness of plate, and the reflexion of light; and between another definite thickness, and its transmission. Therefore, those philosophers are not so much mistaken as our author imagines, who have denominated the Newtonian theory of fits, an hypothesis.* It would be still more erroneous to call that hypothesis any thing but fine and subtle in the most exquisite degree.—We shall afterwards endeavour to trace the steps which led to it.

The remaining part of our author's first chapter is occupied with some remarks upon the different reflexibility of light. It is known to our readers that this property was demonstrated by Sir Isaac Newton from certain experiments with the prism; that by reflexibility, he does not mean a variation in the direction of the reflected rays, but only a power of being reflected at different angles of incidence; and that subsequent inquirers, observing the necessary part which refraction bore in this process, were led to conclude that the different reflexibility of the rays depended upon, and was identical with their different refrangibility. Professor Venturi examines this position, and endeavours to show by other experiments that it is unfounded. His chief argument is deduced from an experiment performed with a hollow glass vessel filled with water, and containing a plate of glass moveable round one of the angles of the vessel. He receives a beam on the vessel at right angles to one of its sides, and allows it to pass through the water, and fall on the moveable plate, which he inclines to the incident beam until a reflexion begins to take place. He finds that the violet light is first reflected; the red last: and, because no separation of the rays by refraction could be effected when they fell at right angles, he infers that this different reflexion demonstrates the point in question. The ingenuity of this process, however, cannot close our eyes to its fallacy. Any one who attends to the above abstract of it, more

* To remove all doubt on this subject, it will be sufficient to subjoin Sir Isaac Newton's own words: 'Every ray of light acquires, in passing through a refracting surface, a certain transient constitution or disposition, which returns at equal intervals during its progress, and makes it, at each return of that disposition, be easily transmitted through the refracting medium, and in the intervals disposes it to be easily reflected.' Prop. XII. Book II. Part III.

In the subsequent definition, he denominates those dispositions *fits of easy transmission.*

more especially if he compares it with the author's third figure, will be speedily convinced that he has in fact made use of the very form of experiment described in the third proposition of Sir Isaac Newton's Optics, book I; and consequently has added nothing to the evidence of that proposition. The moveable plate forms, together with the anterior side of the vessel, a prism, although truncated below. The ingenious contrivance of giving this prism a moveable refracting angle, permits the experiment to proceed without changing the incidence of the rays on the anterior surface; but there is always a second prism joined to the first; and the bare inspection of the third figure shews what a material part it bears in the process. In short, the objections are not in the least removed by this variation of the experiment. Professor Prevost of Geneva, in the Philosophical Transactions for 1798, part II, has given a different and a more satisfactory answer to them, by showing that the refraction of the first prism ought to render the red rays more reflexible, if all the rays had, independent of the refraction, the same disposition to be reflected. But, in spite of all these reasonings, the radical consideration which first gave rise to the controversy, still recurs. Why does this property, this different reflexibility of light, never appear, unless in conjunction with refraction, and in circumstances where the different refrangibility of the rays cannot fail to operate? It is demanded, why a plain mirror of polished metal, upon being moved round its axis, and exposed to the rays at various degrees of inclination, shews no difference in the different rays? Why, for example, when held at an angle of 80° to the incident beam, is a reflexion produced of the red as well as the violet; and why does the same reflexion continue to take place, although this angle be increased gradually to 79 or 79½ degrees, without the slightest appearance of a blue or greenish tinge in the reflected beam, which must inevitably take place if the red and orange part was more transmissible than the violet? It may be said, that the opaque substance of the speculum reflects all the rays at all angles of incidence. It is therefore admitted, that no light can be absorbed by opaque substances, and that, if the thickness of the speculum be diminished until it becomes transparent, all the light will still be reflected.

But let another example be taken, to which no such objection applies. If the rays differ in degree of reflexibility, why does a piece of glass with parallel sides reflect all the component parts of a white beam, equally, at all inclinations to the incident rays? Why, in this case, is not a separation produced by the reflexion of the anterior surface when it is inclined at a large angle to the incident

incident light? Why does not the reflected beam, in such circumstances, begin to assume a blue and greenish tinge, while the transmitted beam is tinged with red and orange? Such ought undoubtedly to be the fact, if reflexibility was altogether unconnected with refrangibility; for the rays are here supposed to fall on a substance capable either of reflecting or transmitting them; and the anterior surface of the glass always reflects a great portion of the incident light, while the rest passes through; but all the constituent parts of those portions, their red rays as well as their violet rays, are uniformly affected in the very same manner at all angles of incidence. Thus then we see that reflexion alone is not sufficient to produce the phenomenon in question. Is every kind of refraction, when coupled with reflexion, sufficient for this purpose? Certainly not. Let a beam of white light fall on a glass parallelipiped, and be transmitted, as it will be without separation, to the opposite side: Let the parallelipiped be inclined to the incident light until the angle of incidence is as great as possible. Through all the stages of this inclination white light alone will be reflected—no decomposition takes place—no prevalence of reflexibility is perceived in the violet or blue rays; they are all equally reflected—all equally transmitted. It remains, therefore, to explain what is the specific nature of this different reflexibility, which only makes its appearance in company with refraction, and not in conjunction with every sort of refraction, but only with that kind which of itself separates the heterogeneous rays. Until this very suspicious circumstance can be satisfactorily accounted for, we should disobey those rules of inductive reasoning which our great master himself has taught us, both by his precept and his example, were we to give our unqualified assent to his doctrine of various reflexibility.

Professor Venturi concludes this part of his speculations with an attempt to show that there is nothing inconsistent in these rays being least reflexible which he admits are most deflexible. That there is any thing inconsistent in this, it would be absurd to assert; but he attempts to demonstrate some connexion between the greater deflexibility and the less reflexibility of the red rays, and so forth, in order to conclude that nature is consistent in her operations. We think his failure is as complete as his attempt was unnecessary; and instead of troubling our readers to follow his very vague reasonings on this matter, the only exceptionable thing which we find in his work, we shall content ourselves with observing that he has entirely overlooked the greater *inflexibility* of the less refrangible rays; a property proved to belong to them by the very same experiments whereby the greater

greater deflexibility was discovered. This property at once destroys every part of Professor Venturi's argument.

We shall conclude this branch of the subject by laying before our readers a theory, which we think warranted by the phenomena, and sufficient to explain the different appearances exhibited by those singular experiments on thin plates, which compose the second book of the Optics. It is recommended by its simplicity, and is in some degree authorized by the ideas partially unfolded in that immortal work. Various incidental observations, scattered over the concluding speculations of Sir Isaac Newton, suggest the remark, that one experiment only upon the phenomena of Flexion was wanting to have made him draw the inferences which we are now about to submit.

When light falls upon thin plates, whose thickness gradually increases within certain narrow limits, and is transmitted through them, it is formed into fringes or rings with dark intervals and of regularly increasing sizes. When the light is homogeneous, the fringes are of the single colour that falls on the plates, but larger in proportion as that light is of a less refrangible colour. When the light is heterogeneous, it is separated into its component parts in the act of forming the fringes, and the fringes are coloured variously accordingly. To the dark intervals, seen by this transmission, correspond fringes, when the plates are viewed by reflected light; and to the fringes seen by transmission, correspond dark intervals by reflexion. It is clear, therefore, that the incident light is alternately reflected and transmitted; reflected at certain thicknesses of the plate, transmitted at others; and always decompounded, if heterogeneous, both by the reflexion and the transmission.

When light passes by the edge of a body, at distances gradually increasing, within certain narrow limits, it is formed into fringes exactly resembling those above described. They are parallel to the edge of the body; uniformly coloured, if the light was homogeneous, and larger in proportion as the colour is of a less refrangible kind. They are of different colours if the light was heterogeneous, and the colours are disposed in the same order of succession as in the former case. These fringes are of two kinds; they are either formed by inflexion or by deflexion. The former have their colours arranged like the rings formed by transmission in thin plates; the latter have their colours arranged like the rings produced by the reflexion of thin plates. Moreover, the dark intervals, and their succession, as well as the succession of the fringes, correspond exactly in both cases. As the thinnest plate makes the broadest ring, so the largest fringe is that which

which is formed by light passing nearest the body, and the largest of the dark intervals is the one nearest the largest fringe. It only remains to remark, that the two cases resemble each other in the circumstance of number. It was long imagined that the fringes by flexion were only threefold, because three only are discoverable by the naked eye. This appearance thus got the name of the '*three fringes*' from the time of Grimaldi, the first observer of it. But it is now well known that they are as numerous as the fringes or rings of thin plates; that, by simple experiments with the prism, they may be seen extending one after another to a great distance, with their dark intervals; and that they always decrease as the distance from the bending body increases.* This one observation only seems to have been wanting, to make Sir Isaac Newton admit the following positions. He uniformly calls the colours by flexion 'the three fringes' in the *Optics;* and the '*tres fimbriæ*' in the '*Principia.*'

When the rays of light fall on the inferior surface of the lens or other convex glass which forms the thin plate, they come within the sphere of action of the superior surface of the other glass or body which forms the plate. That body must therefore, exert upon the rays at such small distances, the same force which it would exert upon the rays were they to pass by it at equal distances. If the rays passed at a certain distance, we have seen that they would be deflected; if at another distance, inflected; and so on in succession alternatively: or which is the same thing, at one set of distances they would be repelled, at another set of distances they would be attracted by the bending body. But it can make no difference either on the power of the body to attract and repel, or upon the capacity of the rays to be acted upon, whether the line of their direction passes by the body without touching it, or falls upon the body, and, if produced, passes through it. The same power of flexion must equally be exerted in both cases, and produce the same effects. When, therefore, the light falls on the inferior surface of the upper glass, and is about to emerge, it is either attracted or repelled by the other glass, which exerts a force in lines perpendicular to its surface. If the light is incident at certain parts of the upper glass, that is, at certain distances from the inferior glass, it will be repelled; if at certain other parts or distances it will be attracted. In either case, it will be formed into fringes or rings of different colours, if the incident beam was heterogeneous,

* Phil. Trans. 1797, Part II. Prof. Venturi, who frequently quotes Mr. Brougham's paper in Phil. Trans. 1796, Part I. does not appear to have seen his second paper.

heterogeneous, and of the same colour if it was homogeneous. To the spaces where the light was repelled, or deflected and reflected, will correspond, below the glasses, dark intervals; to the spaces where the light was attracted, or inflected and transmitted, will correspond dark intervals above the glasses, and rings below. The thickness of the plate of air between the glasses, or of the plate of water in the case of the soap bubble, is only another expression for the distance of the bending body from the rays on which it acts. At alternate distances its action is opposite; and as the distances increase, that action, whether attractive or repulsive, diminishes. At alternate thicknesses of the plates, the distances of the rays from the bending body are alternate, and the action of the body consequently opposite; and as the thickness of the plate increases, the distance augments, and the action, of whatever kind, is weakened. It is now very generally admitted,* that the rays differ in flexibility, and that this quality disposes them in fringes, which, when accurately examined, are found to be spectra of the radiant body dilated by flexion. It is also allowed† that they differ in another quality, viz. in their capacity of being acted upon by the bending body at the same distance; and that this quality disposes them in fringes or spectra of various sizes or degrees of dilatation. Hence all the phenomena of thin plates, are easily resolvable into those of flexion, and the whole classified according to one simple and general law.

It is worth while here to remark, that if the action of bodies upon light regularly decreases as the distance increases, or inversely according to any power whatever of that distance; and if this action is at the same time alternate at different definite intervals of the distance, and if we attempt to exhibit this action by a curve, whose ordinates express the force, alternately attractive and repulsive, while its abscissæ represent the distances, we shall find one of those paradoxes which frequently occur in the higher geometry, and which seem like interruptions in the great law of continuity. The curve will not be regularly progressive and continuous; it will consist of separate portions, going on diminishing in convexity, but following each other *per saltum*, on the opposite sides of the axis; and this, whether the force diminishes as the square or cube, or whatever power of the distance. Such a result in the theory of curve lines always leads us to conclude, that we have found an arch or portion of a line possessed of properties that do not belong to the rest of it, (a circumstance, by the way, not remarked by writers on this subject.)

* Phil. Trans. 1706, pt. 1. † Phil. Trans. 1797, pt. 2.

ject.) But it is not altogether so evident how we are to account for this interruption in the present case. Possibly the law of continuity is not broken, and our data are erroneous; that is, we ought not to assume that the force exerted by bodies on light decreases regularly as any power of the distance, but that, in successive intervals this force becomes, on the whole, less and less, and alternately acts in opposite directions, but, during each particular space of action, it first increases and then diminishes. This is the only way in which it is possible to conceive the law of continuity preserved, and the action of bodies on light at the same time alternate. The force will then be expressed by a curve whose axis is perpendicular to the bending body, and which cuts the axis repeatedly, receding from it alternately on opposite sides, and always receding less and less as the axis increases, till it tends at last to unite with the axis itself. Such a curve has not yet, we believe, been considered: it is evidently not algebraical; it has an infinite number of arches constantly diminishing in convexity, but not necessarily decreasing in the length of their greatest diameters; and it approaches to its axis, not as to an assymptote, for it constantly crosses it, but in another way not hitherto described: it tends to coincide with the axis, and comes nearer to it than any assignable distance; yet, still, it cuts and crosses it again; so that its opposite arches are constantly approaching nearer and nearer the axis, without ever meeting it.

If any one should think that such inferences are proofs that the theory above sketched is defective, it may be proper for him to reflect, that the explanation of the colours of lenses and soap bubbles, by the theory of thin plates, is liable to similar objections. If we attempt to express that theory by a curve, whose abscisse denote the thickness of the plate, and whose ordinates denote the reflective and transmissive powers alternately, we have a curve of the same kind. It is scarce necessary to add, that, according to whatever power of the distance (or thickness) those actions (whether of flexion or of reflexion and transmission) decrease, the curves in question approach a line drawn at right angles to the axis as an assymptote; a conclusion supported by the theory, now universally received, which denies the existence of any perfect contact.

These considerations deserve at least to be discussed. We offer them as approximations to the knowledge of the general law. The proposition now enunciated is not authorized by the facts already established; and farther induction may confirm it as the legitimate mode of classifying all these curious and obscure phenomena. Our purpose will be served if they excite this investigation,

gation, and ultimately add to the stock of solid information upon one of the most sublime and useful of human inquiries. We now resume our account of the work under review.

II. The object of our author's next investigation, was to discover the manner in which bodies decompose the heterogeneous light by their internal structure; and in order to acquire some knowledge of this operation, no method seemed more eligible than to examine the fact, and consider what changes bodies of different colours produce upon the light which they reflect and transmit.

The examination of colours seen by reflected light first suggested itself: but the quantity of rays irregularly reflected from the surfaces of all bodies without any decomposition, rendered all such experiments as were performed with lavigated colours unsatisfactory, however carefully the mixtures were made. He therefore resorted to transparent colours, as better adapted to his purpose. He formed his liquids of substances whose composition, was minutely ascertained; and his apparatus appears to have been simple and well contrived. The object was to ascertain the degree in which coloured bodies decompound the white light of the sun. For this purpose, a rectangular box of pure crystal was filled with liquid, of the colour to be examined, and three different modes of trial were used. A small beam was sent through the box into a darkened chamber, while and equal and similar beam, of white light, as seen through a prism, was compared with it; next, a lens was placed in a white beam, and a prism in the refracted rays (according to Sir I. Newton's method of effecting the greatest possible separation,) and the coloured box was then interposed between the window and the lens; or, lastly the apparatus remaining as before the box was interposed, our author examined the spectrum by looking through the box. The prisms used were of good flint glass. Five degrees of depth of colour were always used successively; the limits of those were the greatest depth at which it was possible to perceive any transmission, and the smallest depth at which ony of the rays were wanting. How the depths were varied, our author omits to mention. At one place it should seem that the space of coloured fluid traversed by the light was the measure; for he speaks of *eight inches* of liquor, through which the rays passed, as the *minimum* of transparency in that colour. In other parts, it appears that the composition of the liquor was itself varied. The intermediate degrees, too, are not specified nor indeed would this be very easy. It is possible to define the limits of opacity and transparency, but the intermediate spaces cannot be divided and proportioned. He talks of three such divisions, however, in all his experiments, and notes the

the kind of rays transmitted at each. Possibly this may only be a mode of stating, that, by increasing the transparency, such a ray was added to the spectrum, and so on. But if the length of the passage which the rays made through the liquor had been assumed as the only test of its opacity or transparency, we apprehend all difficulty and incorrectness would have vanished; for, the sides of the glass box being graduated, and a sliding end adapted to it, the number of degrees on the scale would always have furnished the means of comparing the results. For want of some such contrivance, our author's experiments are defective. We do not learn from them how many inches of a certain solution give its pure colour, and how many transmit various other rays along with that colour. We only learn, that at five several unknown degrees of deepness, different infusions transmit different rays of light. The results of the experiments which lead to this one general conclusion, and no more, are detailed in a great number of tables. Various liquors, to the number of 53, were tried. The first was a solution of gold in nitromuriatic acid. This liquid transmitted first the red and orange rays; then the red, orange and yellow; and so on, till all but the violet passed freely. In like manner, the liquor called '*purpura cassii*' was exposed to trial. The blue rays were the first that passed through; different parts of the yellow, of the green, and of the violet, were the last. Sulphate of copper transmitted the green and blue first, the red last. Ammoniate of copper transmitted the violet first, the red last. Cochineal transmitted the red first, and the green last of all. Several different liquors afforded the very same results. Thus cartamus, amber, seandroin, white-wine, and several others, gave the same results as nitromuriate of gold. What may appear singular, infusion of violets transmitted the colour which we call violet, last of all. The Italian term, *paonnazzo*, is therefore less exceptionable than ours for that tint.

This may serve as a specimen of inquiries, to the details of which we are far from attaching either much importance, or any very signal difficulty. As no measures of intensity are given, by which comparisons of the different processes may be instituted, and as our author uniformly made his experiment in one way, viz. diminishing the deepness of his tints, till all the rays passed freely, no conclusion can be drawn, unless that differently coloured liquors transmit the rays with various degrees of facility. That red liquors should transmit the red-making rays first, is not surprising. To announce this fact, is only to say that those liquors are red. The same remark applies to all the other colours, as far as the beginnings of the scales are concerned. To show what rays are with most difficulty passed through, is of somewhat

somewhat more consequence, and this we learn fully from these experiments. As each trial is uniformly continued until all the intermediate rays have passed, no measure or proportion is given: we can only collect from the remaining parts of this chapter, that certain intermediate rays pass sooner than others, in each body.

We cannot help wishing that our author had particularized the results of his experiments in one respect. When, for example, he viewed the spectrum made by light, which passed through a red solution, and saw no green in it (as was the case in the lightest solution of cochineal, expt. XV.) we should wish to know what colour occupied the middle part of the spectrum. Indeed, we are left to guess what was the form and appearance of the prismatic spectrum in all these experiments. We are told that one solution passed all but yellow, another all but blue. The experiments were made with rays passing through the liquor, and then through the prism: We should wish to know what kind of oblong spectra were exhibited in the two cases now cited, when this form of trial was applied to them. Moreover, we are told that a mixed colour was separated: We should wish to know whether such a colour was mixed only by using particular infusions in the crystal box, or whether colours were compounded by other means, and separated by the agency of the infusion. The experiment of refracting the rays after they passed through the box was tried, to discover the effects of the liquor; but we wish the author had also passed through the box beams formed by the prism and lens, according to Sir Isaac Newton's method. Another remark, is the obvious result of comparing these experiments in general, with the unwillingness of the author to use colours by reflexion It is plain that he only passed different rays through his liquors, in consequence of that very imperfection which he ascribes to the lavigated opaque colours. If these are deprived of polish, they will reflect much less extraneous light than the transparent liquors transmit. Our author, by telling us that one kind of liquid sent through green as well as red rays, only says, that his coloured solution had a certain imperfection, for that it was not purely red or purely green. He proceeds no farther; he does not push the inquiry to any general inferences: and while we admit the neatness of the apparatus, which would have been complete had it possessed the one addition suggested above, we must regret that so trifling a profit was gained from it, and so little pains taken to render its merits useful. 'Non respondere favorem speratum meritis.'

In a subsequent part of the work (chapter IV.) our author draws several inferences from the preceding course of experiments. We have

have mentioned the general one, which alone they seem to warrant. But it leads to particular propositions, some of which are of much importance; and the whole reasoning of the writer, in this part, is above all praise, for its ingenuity and elegance. The following are the chief heads of his remarks. We introduce them here, because they evidently relate to this second branch of the subject, though he has thought proper to place them differently.

The experiments with coloured liquids, give us an easy method of separating the rays of any one kind from all the rest. Thus the seven primary rays are separated as follows: The red, by a solution of cochineal; the orange, by sympathetic ink, made with cobalt; the yellow, by sulphate of copper; the green, by ammoniate of copper, of one degree of strength; the blue, by the same solution stronger; the indigo, by a still stronger solution of the same; and the violet by a solution stronger still. He shows that the coloured liquors and variously prepared glasses serve the same ends.

Let us, however, consider how this object is really affected by such means. How do we know that red rays are obtained pure by the cochineal infusion, for example? Because, by again refracting the transmitted beam with a prism, we obtain no other colour in the spectrum. But if a prism and a screen had been used instead of the cochineal solution, would not the very same result have been obtained? This at least is the very *experimentum crucis* of Sir Isaac Newton's theory. What then is gained by the clumsy method of the solution—a method so uncertain that no two experimentalists can be sure of using the same body until they have made their experiment? And what is the consequence of this variation of the process? We obtain red rays, that is, rays inseparable by a prism. But can any one be sure that they are the pure light of the red part of the spectrum? on the contrary, is it not clearly an impossibility so to compose our liquor as to obtain one pure red ray? The prismatic spectrum obtained from this kind of red beam will indeed have only red rays; and if the liquor is diluted so as to transmit other sorts of rays, the spectrum may consist of red together with these. But it is in vain to think that this spectrum is pure, merely because it has different colours, and because in the lower part it looks reddish, and in the higher green or blue. We think, then, that our author has here overrated the importance of his inference from these experiments; that he has afforded but a poor substitute for the Newtonian method of decompounding heterogeneous light; and that some portion of evident error mingles itself with this part of his deductions.

Some reasoners, soon after the doctrines of Newton were fully established, began to maintain, in opposition to them, that the primary colours should be reckoned only three; others said five; since, they alleged, the green is a compound of blue and yellow; the orange of yellow and red; and so on. It was all the while evident, that those persons had not read Sir Isaac Newton's own account of the composition of beams, by means of the lens and prism; for he shows, in that wonderful part of his discoveries, that any one colour in the spectrum may be compounded of the two neighbouring colours, but that the compounded beam is always separable by reversing the experiment; whereas no change of the experiment, which gives the simple beam of that colour from the sun's rays, can effect its decomposition. Thus, it was clear, that a green may be made of yellow and blue; but this green is again separated by refraction into yellow and blue; whereas the green of the spectrum is by no means whatever separable; and then blue may be composed, in like manner, of green and indigo, or yellow of green and orange. The same fancies have nevertheless been often taken up since, by superficial reasoners, and, if we mistake not, have been paraded by Dr. Darwin, among others, in the poetical notes of his didactic effusions. Professor Venturi gives us a new proof of the absurdity of such tales. He produces a green beam from the operation of his crystal of coloured liquor; and no subsequent transmission is able to change in the slightest degree the nature of this colour.

Euler and others have maintained that the eye is an achromatic glass as it were, curiously composed in such a manner as to counteract the different refrangibility of the rays. Indeed, this is the generally received opinion; and we owe to Professor Venturi the first clear demonstration of its falsehood. The fact, that the eye is achromatic, cannot be doubted: we have the constant evidence of our sense for it: indeed, were it not so, we should never have acquired the knowledge of white. But he shows that this does not depend on the principles which regulate combinations of glasses; and his experiment is singularly beautiful and conclusive. The crystal filled with tincture of turnsol, or of Campeachy wood (logwood,) gives, at a certain depth of colour, both red and violet rays. Let a longsighted person look through this infusion at the white hole illuminated by the sun's light, or that of the clouds, that hole appears red to him. Let a shortsighted person look in the same manner, he sees the hole of a violet colour. Now, if a common lens is interposed between the compound beam and a chart, the focus of the red rays is farthest from the lens, the focus of the violet

rays

rays nearest to it; but if an achromatic lens is used, the rays have one and the same focus. Here is a truly beautiful demonstration; combining reasoning with fancy; and proving both the truth of the proposition, and the tasteful skill of the author, in a manner equally irrefragable. We may add, that this inference was not presented to this most ingenious person now for the first time: he had proved the same thing formerly to himself, from other principles.

But a still more important consequence is drawn from the above-mentioned experiments. Our author concludes that there is a species of colour, or rather a mode of producing permanent colour, altogether independent of refraction, and owing merely to transmission. This is inferred from the general fact, formerly stated, that solutions of substances in liquids first transmit one kind of rays, then another, and then another, according to their intensity; and that the succession varies in various kinds of solutions. From this consideration he explains the effects ascribed to the thickness or thinness of different tinctures. Thus it was observed by Westring, that the common solutions of lichen give almost every different tint, according to their strength and consistency. In this part of his inquiry, Professor Venturi presents us with another refutation of the attacks made on Sir Isaac Newton's doctrines by ignorant persons, and too generally effectual with the multitude of superficial reasoners, from the boldness of their authors. It has been found by many, that when they tried to mix the simple colours as prescribed in one of Sir Isaac Newton's methods, their process failed. Thus, they obtained black instead of white, by a union of seven primarily coloured substances. Our author shows that this was the necessary consequence of placing one substance behind another, instead of mixing them all equally together, in a mosaic work as it were. He explains several other appearances with equal felicity, and shows that the phenomena of solutions of *lignum nephriticum*, so often alluded to by Newton, and of combination of liquors in different glasses, observed by Hook and others, are only particular cases of his general experiments.

The reasonings contained in the fourth chapter of this work, seem to have suggested those extensions of his experiments which our author details in the third. We now proceed to notice the heads of this part of his speculations.

III. He begins by remarking, that those reasoners are mistaken, who imagine the phenomena of permanent colour in bodies can all be reduced to one class, and accounted for by the operation of refraction alone. This he thinks contrary to the established laws of optical science; and he enumerates *four* different general causes of separation of the colorific rays of hete-

rogeneous light, all of which take place in fact, and each of which is independent of the rest. These he first describes with references to their discoverers, and then deduces consequences from them. We shall extract the summary of this branch of science with which he concludes, as a fair specimen of his style, and as containing as brief an account of the subject as can be given. We shall then subjoin a notice of the chief consequences which he deduces from it in the course of his explication and arguments.

'Formano essi adunque un genere di fenomini a parte (i. e. i colori da noi stabiliti) il quale sta egregiamente per quarto nell' ordine, e intanto si rimane distinto e separato dai tre precedenti, in quantoche; i colori del prismo vengon fuori per *transmissione* e *rifrazione* insieme senza aver uopo di riflessione; quelli prodotti dal principio di Brougham nascono per *riflessione*, senz' aver uopo di rifrazione; i colori di Newton sono un effetto combinato di *riflessione* e di *transmissione* senza aver uopo di rifrazione; e il quarto genere di colori da noi stabilito ora si divanno prodotti per semplice *transmissione* senz' aver uopo di riflessione o di rifrazione.

'Non è strano che i corpi si colorino per semplice transmissione. Noi veggiamo che i corpi neri hanno la facolta di annientare e distruggere tutta la luce che ricevono nel loro interno. Ma non è forse in Natura nessun corpo totalmente opaco, ed i corpi neri eziandio finchè non sieno ingrossati a un certo segno: lasciano tuttavia passar oltra una porzione di luce. Il corpo nero adunque non distrugge tutta in un tratto, la luce che viene a percoterlo; ma la consuma, dirò così per gradi, mentre essa penetra gli strati successivi, in che si puo concepire divisa la corticcia esterior di quel corpo.—Or ciò che il corpo nero effettua spiegando in breve tratto un' azion forte su tutta quanta la luce, i corpi colorati per transparenza lo effettuano riguardo solo ad alcune parti di essa luce: *suffocano questi ed estinguono certe determinate specie di raggi, più presto e più facilmente dell' altre.* Dico più presto e più facilmente; perchè al finire del conto, siccome tutti in natura o per poco non tutti i corpi assottigliati quanto occorra divengono transparenti, così pur tutti o per poco non tutti ingrossati, quanto occorra diventano opachi.

'Codesto annientamento d' alcune sorte di raggi nell' intorno de' corpi a preferenza dell' altre deve per necessità ammettersi anche nella più parte di quelli, che si colorano alla maniera di Newton.* Un grande rotondo matraccio di vetro, pieno d' infusion assai carica di legno nefritico non presenta più alla vista se non i colori della sua riflessione; dove son iti quelli di transmissione? Essi han penetrato il liquore, lo han penetrato per linea retta, ma non ne escono da veruna banda, perchè nell trapassarne la molta profondità sono andati mancando l' un dopo l' altro a poco a poco, fino a svanire e perdersi interamente. Lo stesso abbiam veduto intervenire all' oro, e forse interviene al rame, ed a chi sa quanti altri.' p. 65—7.

From

* Optic. lib. I. part II. ad prop. 19.

From the second species of colour, that produced by simple reflexion, our author deduces various consequences. Three of these are quoted from the English writer; and the fourth he gives, without mentioning by whom it was discovered. If, he says, a plate of glass be exposed to the vapours of boiling mercury, and then held between the eye and a luminous body, a clear halo or coloured circle is seen, in consequence of the reflexion of the light from the grains of the condense mercury. This cannot, he adds, be owing to inflexion; for the angle which the halo subtends is of six, ten, and sometimes more degrees; whereas the angle subtended by rings formed by flexion is never of more than six minutes. He explains from this experiment (which to us seems to require confirmation and variation before it justifies the preceding inference) the theory of lunar and solar halos; and thinks that the property of light, on which the explanation rests, forms a great addition to the theory of those who deny that the transmission of light takes place in those phenomena. We cannot imagine why our author, who thus readily admits reflexibility as a cause of colour, should have overlooked flexibility, a property whose influence is very extensive, both on the surfaces and in the internal structure of bodies. He admits that colour is produced from this property, in the first part of his work, and even hints that we may trace some connexion between the phenomena presented by its operation, and those observable in the experiments of thin plates.

But the most valuable portion of this chapter is the inquiry into the manner in which bodies transmit light, and the circumstances that attend this operation. In order to observe these, our author filled five vessels with equal parts of a green solution of trefoil in alcohol, and exposed each in the same situation, but with the five following variations: One was covered by a black cloth from all access of light; another was covered by a sheet of white paper; a third was exposed only to the light which passed through the apparatus of glass, formerly described, containing a solution of the same liquor as was in the five vessels, but renewed constantly, lest the light might change its colour; a fourth was exposed to light coming through a yellow solution of saffron; and a fifth to the light transmitted by a red solution of cochineal and alum. The colour of the green liquor, covered up by a black cloth, altered not in ten hours; that of the liquor covered with white paper was almost destroyed; that of the liquor exposed to green rays was a very little changed; that of the liquor in yellow rays was more; and, in the red rays, it was still more altered. Our author infers from hence, that those rays only discolour a body, which do not pass through it, but are absorbed and act upon the colouring matter of the substance. He repeated the same experiment

experiment with cloths died in the infusions of the same colour, and obtained a like result.

Two laws, therefore, appear to bear a close analogy to each other. Heat is only produced by the absorption, not by the reflexion or transmission of light; and colour is affected only by the rays which are stopped in the body exposed to their influence. To say that coloured bodies detain or stifle (as some have called it) the rays which enter them, by various reflexions and refractions within their substance, is absurd. Refraction and reflexion can only (our author says) divert rays from their course. Absorption is something different, and implies a total detention of the incident light. That black bodies absorb and detain, or destroy light in this manner, has long been allowed. He maintains, that coloured bodies do the same in a different degree. This destruction he shows to be quite different from refraction: the one of these appearances takes place in a thousand cases without the other.

It cannot be denied, that such an account of the phenomena is much more simple and consistent with various analogies, than the one which it is intended to displace. If light is a material substance, differing from other bodies only in the vast rapidity of its motion before incidence, it is reasonable to think that, like other substances, it should be capable of entering into various unions, according to the laws of chemical affinity and corpuscular attraction; and that, when it no longer can be, in whole or in part, perceived beyond the limits of the body where it first fell, it should be allowed to be retained in the body's substance. Yet there are some difficulties attending this solution also; and some advantages belong to Professor Venturi's adversaries, which that ingenious and acute reasoner has overlooked in the ardour of his systematizing spirit. For example, the obvious difficulty is entirely kept out of view, viz. the impossibility of conceiving that all the light which falls is absorbed and retained; and the necessity under which we are thus placed, of admitting that much of it is conveyed away unperceived. If so, why may not the rest go off by the same means? The adversaries of Professor Venturi, too, are by no law of optics obliged to maintain, that the light is absorbed or destroyed by repeated reflections and refractions within the substance of the body. They only affirm, that it is detained by those operations, and sent off gradually; that it is separated into a thousand parts, and sent off insensibly in various directions. This they may still maintain, notwithstanding our author's ingenious experiments and reasonings. For the rest, though we willingly acknowledge the elegance of the above experiment, and admit that it confirms former deductions from different operations, we do not apprehend that there is great originality in the conclu-

sion

sion which our author draws from it, viz. that those rays only discolour a body which are absorbed by it. It would be difficult, upon the principle of absorption, to suppose that those rays which pass freely, alter the internal structure of the body. The analogy, however, between the experiment thus conducted, and the famous one of Franklin with the coloured cloths exposed to the sun's light, is very striking. We would only remark, that the circumstance of quantity or intensity, as influenced by mere density of light, is not at all considered in eitheir of those cases. When our author exposed his liquids to white and yellow and green rays, he could not say, beforehand, that the white was less strong than the other two; and if it had been much less strong, it would have discoloured the liquor less, according to his own principles. In like manner, it is not known whether the yellow or green rays were equally dense, that is, whether the substances in the crystal box were equally transparent or permeable by rays of their own colour. The yellow discoloured the infusion more than the green. But is it clear, that there were as many green rays as yellow upon a given space of infusion in the respective vessels? Our author's whole reasoning proceeds on an assumption, which, had he stated it to himself, instead of making it tacitly, must have struck him as perfectly gratuitous, viz. that every body transmits, in equal quantities, the rays which it transmits most copiously. He says that to the sense, the three holes illuminated by red, yellow and green rays, appeared to transmit equal quantities of light. We deny that the sense could judge of such a thing. The difference between red and yellow, and still more the difference between red and green, is so very great, as to its impression on the sense, that no human eyes can abstract from its effects, and calculate the density of beams composed of such various materials, independent of their opposite qualities. Thus, too, more light may have been transmitted by the white paper than by any of the other covers of the vessels; and this may have been the cause of its discolouring the liquor most of all. It is impossible, in making such experiments, to guard against this source of error. As often as we would compare the qualities of the different rays, by preserving them in their artificial decomposition, after passing through coloured substances, we find ourselves left at a loss to reason from the results of our experiments, both by the different transparency of the different coloured substances employed; and by this additional circumstance, that we are all the while operating upon an artificial compound, an impure kind of light, whose composition we cannot well know. If we wish to examine the effects of different kinds of

of rays on substances—for instance, to compare either their various powers of heating, or of separating oxygen, or of discharging colour, or (which equally merits notice) of affecting odour and taste, we must evidently operate upon the genuine kinds of simple homogeneous rays contained in the sun's light decomposed by the prism. This is the only fair, unequivocal mode of making experiments on different sorts of homogeneous light; and so excellent an optician as Professor Venturi, must have at once resorted to it, had he not entertained an unfortunate, but not unnatural, predilection for the form of process which he had himself invented, and whose merits, in other cases, we do not at all deny.

But whatever may be our opinion as to the eligibility of this method of inquiry, we can entertain no doubt of the ingenuity with which it is made subservient to the author's deductions, and still less can we withhold our applause from the singular modesty of the style in which he concludes this branch of his researches.

'It is perhaps reserved (says he) for the industry of the age which is now opening, to determine with certainty the true reason of the detention of light in those coloured bodies which owe their tints to the transmission of light alone. We must rest contented with having barely proved the fact; happy if we have only succeeded in separating from each other, the four great operations by which colour is produced, so that the students of this science may not hereafter be induced to push farther than experience justifies, those laws, whose existence experience has disclosed.' p. 74.

IV. We now come to the last part of this valuable work, and it is inferior to none of the others, either in the ingenious originality of its combinations of facts (our author's characteristic quality,) or in the clear and lucid manner of its detail. The subject is the colours known by the names of accidental colours, imaginary colours, and ocular spectra. These appearances have formerly excited much attention. Professor Venturi discussed their nature in a paper which gained the prize in the Society of Modena; and he now gives the outlines of the doctrines then advanced, with the confirmations added by his subsequent experiments. If he has given no new information relative to the causes of that phenomenon, we must admit, that he has, at least added much to our knowledge of its circumstances, and has, by reasoning upon those circumstances, brought to light several interesting particulars regarding the law of their combinations. We present our readers with the propositions, in which his theory is condensed.

1. The imaginary colour left in the retina, is always the same from

from the same real colour, whether that real colour be simple or mixed.

2. The imaginary colours are produced in the retina in utter darkness, after it has been impressed with the real colours; and the real colours produce the imaginary ones in the following order: Red produces a tint between green and blue; orange an indigo; a colour between green and yellow gives a violet; a colour between green and blue gives a red; indigo gives an orange; and violet gives a tint between green and yellow. Thus, we see that the imaginary and real colours are always opposite to each other; and that if any imaginary colour B is produced by any real colour A, then the real colour B produces the imaginary colour A.

3. The nature of the sentient fibre of the eye is such, that, when once excited, it continues of itself certain conceived motions or sensations, only changing and modifying them according to peculiar and regular laws.

4. The union or succession of different colours is agreeable and harmonious, provided the combined or consecutive colours are so related to each other, that the one is the imaginary colour produced by the other, when real. Thus, red and green are often observed to produce, when mixed, or following each other, an agreeable effect. Leonardo da Vinci promised to represent, in a general enumeration, the colours which harmonize in a picture. Unfortunately, he has not executed the plan. But others have given detached remarks on this subject. Thus, Newton observes, that orange and indigo agree well together. And Virgil (an authority of a very different description) says, '*Mollia luteola pingit vaccinia caltha.*' Now, it may be observed, that orange is the imaginary colour produced by a real indigo, and conversely. Raphael Mengs, too, says that yellow and violet harmonize admirably together. Now, the tint of violet corresponds to a tint between green and yellow. The same painter adds, that red, yellow, and blue, do not harmonize together; but that each of these harmonizes with the intermediate colour of the other two; by which he means, that red harmonizes with green, yellow with violet, and blue with orange. A similar conclusion, very nearly, might have been drawn, *à priori*, from the above proposition, by inspecting the list of relations formerly given (prop. 2.) between the real and imaginary colours. Farther, it has been found in the theory of music, that a sound leaves in the ear the sensation of its twelfth, or the octave of its fifth; and from thence are derived the less perfect concords. Now, it is very remarkable, that if we divide the spectrum of simple colours according to the Newtonian rule, the

tints

tints which harmonize according to the proposition under consideration, are exactly fifths to each other. Thus, it may be inferred, that the rules of harmony in sounds and in colours are exactly similar; and we trace, in this manner, a beautiful analogy between the senses of hearing and sight—an analogy which future discoveries may perhaps extend to the senses of smell and taste. Our author, however, adds an ingenious speculation, of a more general nature, upon the *harmony of ideas.* He observes, that universal experience in oratory, painting, architecture, poetry, as well as in the logic of scientific classifications, proves two distinct points, *first*, that the union of similar objects gives a certain pleasure to the mind, viz. the pleasure derived from order, regularity, uniformity; *secondly*, that a certain pleasure is also derived from the apposition of extremes, viz. the pleasure of contrast. Hence, he infers that a law regulates all our mental pleasures in this particular, similar to the special law of calorific harmony above demonstrated, viz. 'that those ideas or sensations are harmonious together, which, by the constitution of our minds, are mutually exchangeable.'

5. If a real colour is impressed on the retina more strong than one formerly impressed, not one, but several different imaginary colours succeed it. This curious proposition our author demonstrates by very decisive experiments: and he shows that it is true of all successions of the prismatic colours.

6. The sensations of different colours depend, not on different orders of fibres in the sensorium, but on different movements of the same fibres. Such language is much more theoretical, than the idea contained in the assertion. Our readers will easily perceive, that, without specifying the place or manner of sensation, and without any reference to the sensorium, as our author calls it, a true proposition is couched in the above terms.

7. If the rays of any kind whatever strike the eye with sufficient force, a sensation of white is produced. This singular proposition, that the sensation of white depends not on the mixture, but on the intensity of the light which produces it, is proved in the following manner. If a spot of red light, separated in whatever way from the other rays, is looked at on a white paper, no colour but red is seen. But if those red rays fall on the eye, the image of the luminous body is white, except at its outer edges, which are tinged red, and our author attempts to show, by some calculations on the intensity of beams, that this effect ought not to be produced, by concentrating the same red rays on a chart, by means of a lens, but only when they fall directly on the eye. We are inclined altogether to deny this proposition; to ascribe

the event of the experiment to some deception produced in the eye, by the mixture perhaps of imaginary with real colours; and to maintain that if the mere increased intensity of the red rays produced the sensation of white, that colour should certainly appear on the chart, provided the red rays, separated by any means from a sufficiently large beam of light, were condensed by a lens and the focus received on the chart. On the contrary, the more intense this focus of red rays is, the deeper is the red produced.

8. An imaginary and a real colour coinciding together mutually temper and mix with each other, exactly like two real colours. This proposition is proved by several very ingenious and original experiments.

We have now only to return our thanks to the author for the pleasure derived from the perusal of his very valuable work; to recommend it earnestly to the attention of our scientific readers; and to express our hopes, that his new vocation * will not interfere with the farther prosecution of studies far more dignified and delightful to a rational creature, than the intrigues of courts, or the vulgar turmoil of republican factions.

ART. III. *Poems from the Portuguese of Luis de Camoens, with Remarks on his Life and writings. Notes, &c. &c.* By Lord Viscount Strangford. Printed for J. Carpenter, London, 1803.

THE minor poems of Camoens are held so low in the estimation of the Portuguese themselves, that it cannot be considered as matter of much surprise, that their merits should be but little known among foreigners. Vain of having produced the first, we may say the only epic poet that has adorned their peninsula, his countrymen are too apt to neglect his smaller compositions, and to undervalue that originality of sentiment, and that strong and genuine expression of feeling in which they abound, and which claim for their author (as strongly perhaps as the boasted Lusiad itself) the character of a poet. Such being our opinion with regard to these pieces, we were much gratified at learning that a young person, distinguished by his rank, and possessing a taste capable of discerning their neglected beauties, possessed at the same time sufficient industry to undertake to transplant these beauties into his native soil. Under the influence of these considerations,

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* Professor Venturi has lately been named ambassador from the Italian Republic to the Helvetic body.

we had been led, somewhat unreasonably perhaps, to form expectations of Lord Strangford's performance, which have not been completely realized; for, however we may have been gratified in the perusal of this little volume, by the easy versification, and the lively, though too often licentious imagination which it exhibits, we must own that we have not, upon the whole, derived from it that satisfaction which we were at one time inclined to anticipate. What part of our disappointment is to be attributed to the extravagance of our own ideas, and what to the insufficiency of Lord Strangford's translation, will best appear from a short consideration of the work itself, and a comparison of it with its original.

The poems, indeed, we must observe, in the *first* place, cannot honestly be termed translations from Camoens. The office of a translator requires, *first*, that he should express, in general, faithfully the ideas of his author; and, *secondly*, that his manner of expressing them should approach, as nearly as the difference of the languages will permit, to the style of the work which he translates. We will not say that Lord Strangford has *failed* in both these points; he writes with too much facility to allow us to suppose that he could have been at a loss for language, had he made the attempt; but, that he has totally neglected them, no one who compares any one of these pieces with the original, will hesitate to admit. And though the diffidence with which his work is offered to the public, entitles it, in other respects, to considerable indulgence; the confident assertion contained in his prefatory remarks (p. 31.) 'that for the most part, he has closely copied his author,' challenges, upon this ground at least, a severer examination, more especially as the affectation of apologizing now and then, by a note, for an insignificant deviation from his original, would seem to imply, that where such apologies are omitted, no deviation has been made. The fourth sonnet in Lord Strangford's translation will serve to illustrate this remark; and we shall transcribe the whole piece, not as being a very accurate translation, but because, such as it is, it is less disfigured by those prettinesses with which Lord Strangford has thought it necessary to embellish his original, and is therefore better calculated to give some idea of the style of the Portuguese poet.

'Slowly and heavily the time has *run*
Which I have journey'd on this earthly stage;
For, scarcely entering on my prime of age,
Grief mark'd me for her own; ere yonder sun
Had the fifth lustrum of my days begun:
And since, compulsive, Fate and Fortune's rage
Have led my steps a long, long pilgrimage
In search of lost repose, but finding none!
For that fell star which o'er my cradle hung,

Forc'd

Forc'd me from dear ALENQUER's rustic charms,
To combat perils strange, and dire alarms,
'Midst that rough main, whose angry waters roar
Rude Abyssinia's cavern'd cliffs among,
—Far from green Portugal's parental shore!'

'*To combat perils strange.*' The original is not very graceful—'*Me fez manjar de peixes*; literally, 'had made me *food for fishes.*'

The noble translator's delicacy is shocked at the uncouth notion of a gentleman being made *food for fishes*; but if, in his 'severer studies,' he sometimes takes up his Homer, he will find that this barbarous idea is by no means new in poetry; and, surely, it is not more horrible than the idea of being preyed upon by vultures, dogs, or worms, all of whom, it cannot be disputed, are very classical performers. But it 'is not very graceful,' and Lord Strangford therefore quarrels with it; forgetting that, to be graceful, is not the only aim of poetry, and that he who sacrifices every thing to the Graces, though he may be reckoned a poet among trifles, must be contented to appear but a trifler among poets. However, though we could not admit the necessity of any alteration in the passage before us, we could not but approve that delicacy of conscience which forbade Lord Strangford to pass over in silence even so slight an innovation. In sonnet 5th, we find another instance of this appearance of extraordinary respect for the text of Camoens, where the line 'Scarce had the purpling east began to glow,' is followed by a note to announce the liberty which has been taken in translating *marchetada* (literally *inlaid*) by the word *purpling*: Perhaps *dappled* would have expressed accurately enough the original idea, and might have spared the apology. But who would have expected from a translator, who professes himself so scrupulously exact as to announce the variation of a single ornamental epithet, that he should not only interpolate whole passages, but that he should gravely comment upon his own interpolations? This, however, has been done by Lord Strangford in his note upon sonnet the 15th.

'I sang of love—and in so sweet a strain,
That hearts most hard were soften'd at the sound,
And blushing girls, who gaily throng'd around,
Felt their souls tingle with delightful pain—
For quaintly did my chanted songs explain
Those little secrets that in love abound—
Life in a kiss, and death in absence found—
Feign'd anger—slow consent—and coy disdain,
And hardihood, at length with conquest crown'd.
Yet did I not with these rude lips proclaim

From

From whom my song such sweet instructions drew,
Too weak, alas! to pour the praises due
From youthful gratitude, to grace the name
Of her, who kindly taught me all she knew!'

The literal translation of this from Camoens is as follows:

'I will sing of love so sweetly, in terms so well concerted, that it shall make the breast, that feels nothing, feel two thousand amorous emotions. I will make love enliven all, by painting a thousand delicate secrets, mild anger, sighs of anguish, rash boldness, and absent pain. And I must content myself, lady, with telling the least part of your noble disdain, of your mild and severe look: But, for singing your air, your exalted and miraculous composition—there knowledge, genius, and art fail.'

Here we see that, in the original, there is no mention whatsoever of those *blushing girls* with *tingling hearts*, with whom we are presented by Lord Strangford; and whilst, like another Timotheus,

'The mighty master smiles to see
That love is in the next degree,'

he smartly observes in his note, that 'the aptitude of these young scholars brings to mind a celebrated passage in the confessions of St. Austin, 'Si non amaveris, frigidæ loquor: Da amantem, da sentientem, da desiderantem—sciet quod loquor!'

But Lord Strangford, throughout his whole translation, if he has not wilfully misrepresented, has entirely misconceived the character of Camoens, and this misconception leads him into continual errors. There is nothing in Camoens to make a girl blush; his feelings were delicate, and he wrote as he felt. Whether it be owing to the general deterioration of morals, or whether it be that young persons commence authorship at an earlier age than heretofore, whilst their fancy is as yet unchastised by experience, it is a melancholy truth, that delicacy is almost excluded from the species of poetry now before us. The young author of the present day suffers his mind to wander without restraint or control; and the extravagant creations of a prurient imagination, tricked out in all the tinsel and frippery of the modern poet's effeminate vocabulary, are thoughtlessly put into the hands of youth, by those who would have been shocked at the far less seducing danger of a downright obscenity.

Lord Strangford's poems furnish us with too many proofs, that even the duty of a translator does not impose sufficient restriction to secure us from such disgusting intrusions, and to check this puerile itch for indelicacy: and the practice which he has frequently adopted, of writing a page or two upon what, in the original, is comprised in three or four lines, affords him free scope for indulging

ing this propensity. We will not produce more examples of this, than those which unavoidably present themselves in the quotations already made. It would, indeed, be difficult to select any piece to which some addition has not been made in this taste by the translator; and though he has sometimes improved upon his original, he has likewise frequently corrupted the purity or simplicity of his composition, by his own inordinate passion for unseasonable embellishment.

The Canzon at p. 52. of Lord Strangford's volume, is *very graceful:* But it is not a translation; and though it may be thought an embellishment, it certainly is not an improvement upon Camoens. The reader shall judge for himself.

'When day has smil'd a soft farewell,
And night-drops bathe each shutting bell,
And shadows sail along the green,
And birds are still, and winds serene,
I wander silently.
And while my lone step prints the dew,
Dear are the dreams that bless my view;
To Memory's eye the maid appears,
For whom have sprung my sweetest tears,
So oft, so tenderly.
I see her, as with graceful care
She binds her braids of sunny hair;
I feel her harp's melodious thrill
Strike to my heart—and thence be still,
Reecho'd faithfully.
I meet her mild and quiet eye,
Drink the warm spirit of her sigh,
See young love beating in her breast,
And wish to mine its pulses prest,
God knows how fervently!
Such are my hours of dear delight,
And morn but makes me wish for night,
And think how swift the minutes flew,
When last amongst the dropping dew,
I wandered silently.'

The words of Camoens, in his 34th sonnet, are these—

'When the sun overcast, is showing to the world a tranquil and dubious light, I go along a delightful meadow, figuring to myself my enemy—Here have I seen her composing her tresses—Here with her face upon her hand, so beautiful!—Here talking cheerfully; there thoughtful—Now standing still; now walking—Here was she seated; there she beheld me, as she raised those eyes so indifferent—Here somewhat moved; there secure—Here she grew sorrowful; there she smiled. And, in short, in these weary thoughts I pass this vain life which lasts for ever.'

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We are aware that those who are unacquainted with the original, except through the medium of our bald and unmusical translation, will not be enabled to do very ample justice to its merits. They will, however, perceive, that Camoens, when he walks abroad to meditate upon his mistress, does not pay much attention to the state of the weather; and, far from occupying himself with the flowers, the winds, and the birds, is so taken up with the object of his affections, that he appears not even to observe that he is getting his feet wet with the dew. He indeed says, that he has sometimes succeeded in making a momentary impression upon her feelings; but he is not so vain as to affirm that the lady is actually enamoured; nor does he think it necessary to inform us what would have been his own sensations in such circumstances.

The authors of amatory verses may be divided into two classes; those who write from the heart, and those who write from the imagination. Camoens was of the former description; and therefore it is, that though none ever suffered more severely, or felt more acutely than he did, we meet with so little in him that is either extravagant or unnatural, if we except that quaintness of expression, into which he was now and then misled by the general bad taste of the times in which he wrote. His translator appears to have feared a reproach from him in the words of St. Austin, 'frigidæ loquor;' and therefore he has warmed him up with stimulating spices, and tricked him out in the meretricious ornaments of Mr. Little's school, the enervated licentiousness of whose style is such as might be expected from the more cultivated members of Mr. Fribble's Club—'There is a club of us, all young bachelors, the sweetest society in the world; and we meet three times a week at each other's lodgings, where we drink tea, hear the chat of the day, invent fashions for the ladies, make models of them, and cut out patterns in paper. There's Phil. Whiffle, Jacky Wagtail, my Lord Trip, Billy Dimple, Sir Dilberry Diddle, and your humble ——.' * Mr. Fribble indeed is not to be compared as a poet with any of these gentlemen; but affectation deserves as little quarter as imbecility; and we really are not prepared to show any sort of indulgence for a protracted and artful depravation of considerable talents and accomplishments.

Nor can we confine this censure to the poetry of this new school: the same want of nature, of manly simplicity, and intellectual vigour, prevails throughout their prose compositions. In this part of Lord Strangford's publication, indeed, the misrepresentation of Camoens's character is more direct and more inexcusable

* Fribble, in Miss in her teens.

excusable than in the poetical pieces, where some allowance might be made for the difficulty of translating; and where the reader is left at least to draw his own inference from what is before him.

'Gallantry (says Lord Strangford) was the leading trait in the disposition of Camoens—His amours were various and successful—Woman was to him as a ministering angel; and for the little joy which he tasted in life, he was indebted to her. The magic of female charms forms his favourite theme; and while he paints the allurements of the sex with the glowing pencil of an enthusiast, he seems transported into that heaven which he describes. Nor did this passion ever desert him. Even in his last days, he feelingly regretted the raptures of youth, and lingered with delight on the remembrances of love.' *Prefatory Remarks*, p. 13.

And again, 'It is improbable that he remained long constant to the memory of a departed mistress, when living beauty was ready to supply her place. His was not a heart that could safely defy temptation, although the barbarous ingenuity of some commentators would make us believe, that all his amours were purely platonic, and that he was ignorant of the passion in every other respect. Happily for himself, the case was different; and his works record that he more than once indulged in the little wanderings of amatory frolic.' *Ibid.* p. 13.

All this may be very true; but we do not think that the question, whether Camoens was sensible to the same feelings and passions with the generality of mankind, is at present of great importance; still less do we think that the establishment of this important fact would entitle him to such profound admiration as his translator expresses when he triumphantly proclaims his discovery. But Lord Strangford informs us, that his book was the amusement of a *young* mind, (Pref. Rem. p. 31.); and time, it is to be hoped, will make some change in his opinions: If not, wo be to our fair countrywomen; for he already possesses, as he informs us, what he considers as the principal offensive weapons for carrying on his warfare—locks of auburn, and eyes of blue; and he ventures to hope, upon the strength of those indications, that he is of an amorous disposition. Our readers may doubt the fairness of this representation; and we therefore present them with the memorable words of the original.

'*Thou hast an eye, &c.* Notwithstanding all that has been said, and all that has been written, to disprove the existence of a real and positive standard of beauty, were we to argue from the universality of poetical taste in every age, we should place the essence of female loveliness in the description before us. *Locks of auburn and eyes of blue* have ever been dear to the sons of song. The translator almost ventures to doubt, whether these two ideas do not enter into every combination of charms created by the poetical mind. The former are almost constantly ac-

companied by the advantages of complexion, and by that young freshness which defies the imitation of art. Sterne even considers them as indicative of moral qualities the most amiable, and asserts that they denote exuberance in all the warmer, and consequently in all the better feelings of the human heart. *The translator does not wish to deem this opinion as wholly unfounded. He is, however, aware of the danger to which such a confession exposes him; but he flies for protection to the temple of AUREA VENUS.*' Note to p. 56.

There we shall leave him, nor presume to violate with unhallowed looks the asylum of the goddess: but, whilst we earnestly hope that he may there meet with some prophetic priestess who will kindly satisfy his doubts, and relieve his anxiety as to his future destiny, we must inform our readers that the canzon, as well as the note in question, appear to have been written for the express purpose of conveying to the world the very interesting particulars which they contain with regard to the noble author; there not being to be found in the original, from which it professes to be drawn, any mention whatever of blue eyes, auburn hair, young freshness, amorous disposition, or any other of those advantages which the noble writer either possesses, or thinks he has the prospect of possessing, over the rest of the world.

It is almost unnecessary to add, that the work is neatly printed upon wire-wove paper, and hot-pressed. A portrait of Camoens is prefixed to it, in which we suspect that his person (which was in reality disfigured by the loss of an eye in an expedition to the coast of Africa) has been as fancifully embellished by the graver of the artist, as his writings have been by the pen of Lord Strangford.

Art. IV. *Nuova Soluzione d'un Problema Statico Euleriano.* Di Gregorio Fontana.

From Memorie di Matematica è Fisica della Societa Italiana di Scienze. 1802. pp. 626.

THE problem discussed in this paper, was suggested to the celebrated mathematician whose name is affixed to it, by a passage in Euler's memoir upon the law of equilibrium, pointed out by Maupertuis, about the middle of the last century. We shall preface our account of Signor Fontana's speculations by a few remarks upon the history of that law.

It was maintained by Maupertuis, that, in preserving the repose of the universe, and in performing its various motions, nature

ture uniformly employs those means which require the smallest expense of force. A body falls to the ground in the vertical line; and this is the shortest route which it can take to arrive at the surface of the earth. Light is reflected at an angle always equal to the angle of incidence. If the force of incidence is divided into two, one parallel and one perpendicular to the speculum, it is clear that the force of reflexion must be either greater or less than those two forces of incidence, unless the angle of reflexion is precisely equal to the angle of incidence. In the former case, more force would be required to reflect the light; in the latter, a portion of the force of incidence would be lost. Therefore Maupertuis contended, that the actual proportion of equality is the only one which neither creates any loss of the original force, nor requires any increase of it.

This theory was illustrated by various applications. Considerable ingenuity of demonstration and elegance of arrangement was mingled with a large portion of metaphysical reasoning, and a variety of subtilties formerly unknown in this department of science. No trifling portion of error was introduced by the undisciplined talents and presumptuous imagination of the inventor. The whole was paraded in a manner peculiarly obnoxious to men of real science, from its vanity and dogmatism. The author was elevated to the chair of the Berlin academy; an institution remarkable, at that time, for the violence of its aristocracy, and submissive, even in its opinions, to the pleasure of the court of Potsdam. He obtained, in this association, a kind of political support, not unmingled with persecution against those who ventured to attack his doctrines. The wit of Voltaire, and the more sober expositions of M'Laurin, were repelled for a season by this most unscientific combination. But all was in the end ineffectual. And, as if to punish, by a signal fate, such an undue method of defence, the name of Maupertuis is now only known by his expedition to Lapland, in the company of those very French academicians who afterwards attacked his theory; while, of that theory, there does not remain a vestige in the science of Dynamics as at present established, although unquestionably, it contained much valuable matter.

It will scarcely be credited that such should have been the premature end of a doctrine, to prove, illustrate, and extend which all the talents of the first of analysts were exhausted. The illustrious Euler appears to have been, from the first, peculiarly captivated with the simplicity and elegance of Maupertuis's general law. In a single volume of the Berlin Memoirs, we meet with no less than three elaborate papers in its defence. Euler not only adopted the doctrine, but followed it through a thou-

sand

sand consequences, which were far above the reach of the inventor himself. He became its warmest eulogist, and undertook its defence against the French and German mathematicians, with all the keenness of controversy. The terms which he uses to describe its merits are inferior to none of those which the universal consent of mankind have almost consecrated to the service of the Newtonian philosophy. Yet the very remains have vanished, '*etiam periere ruinæ*,' of a system which was praised with the following encomiums by the disinterested zeal of the first mathematician of the age. We extract these eloges with which Euler conludes two several papers on the subject, because the whole fact is extremely curious in the history of the science.

'There cannot remain any doubt that this great principle contains, as it were, the essence of all our knowledge in the science of statics. It must be regarded as the true principle of dynamics; as the most sacred law of nature. It is evidently the most happy and most important discovery that has ever been made in this science; unfolding to us at once the general law which all cases of equilibrium obey, and displaying the genuine plan of nature, to operate at all times with the least possible expense of force. (*Mem. de l'Acad. des Sciences et Belles Lettres de Berlin.*' Tom. VI. p. 183.

In a reply to some attacks made upon the doctrine of the *minimum*, he concludes as follows:

'This principle is far superior to all former discoveries in dynamics. Its application embraces the whole range of that science,' &c. p. 217.

It is worth while to state more precisely the nature of a doctrine thus described by one who himself extended, by various discoveries this very science, and to examine what peculiar merits he could discover in it.

He certainly has given a much more scientific explication and developement of it than can be found in the writings of the original author: and whatever value we may be disposed to allow the materials, the excellence of the fabric cannot be called in question

The fundamental proposition of the doctrine is this: Let there be a system of bodies, of whatever number, masses, and position, attracted in any directions by forces acting as any conceivable powers of the distances from the centres of those forces. Call the masses of the bodies, M, m, μ, &c.; their distances from the centres of attraction, Z, z, ζ, &c. respectively; the forces of attraction, F, f, φ. &c.; and the powers of the distances to which those forces are proportional, N, n, ν, &c. Then, in order that an equilibrium may take place, and that the system may remain at rest, it is necessary that

$$MFZ^{N+1} + mfz^{n+1} + \mu\varphi\zeta^{\nu+1} +, \&c.$$

be

be either a *maximum* or a *minimum;* and therefore the fluxion of this quantity being put = 0, will give the condition essential to the equilibrium supposed.

There are therefore two kinds of equilibrium contemplated in this theory; the one when the above forces (denominated by Maupertuis the quantity of action) are a *maximum*, the other when they are a *minimum*. These two kinds of equilibrium Euler describes by the example of a cone. If it is required to place a cone at rest on a plane, two positions will equally satisfy the conditions; the cone may be placed on its base, or vertically on its apex. In the former case, the variation of its position to any side does not permanently derange the equilibrium; in the latter, the smallest movement is fatal to the rest of the body. In Euler's memoir, above quoted, we find various demonstrations and applications of this general principle. The author in each of the particular cases, first proposes to find the conditions of equilibrium by this doctrine. He easily deduces the fluxional equation according to the method of *maxima* and *minima*. By exterminating from thence the fluxions of the variable quantities, he obtains a finite solution; and he shows that this is the same with the solution obtained by the ordinary process. Thus he finds, by the doctrine of Maupertuis, that two forces drawing a body can only keep it at rest when they act in the same line, and are equal and opposite; and that the lever can only be in equilibrio when its opposite weights are inversely as their distances from the fulcrum. He applies the doctrine in the very same manner to the general and very difficult case of curvilinear levers, as the catenarian curve, and velarian curve; investigates the law of the composition of forces and of the different mechanical powers (which indeed are all distinctly resolvable into the case of the lever). He also deduces, from the same doctrine, the general proposition relative to the operations of machines, or combinations of the mechanical powers, and extends the whole to the principle of the spring. Nothing can be more elegant than the whole of these investigations. We are at every step delighted with the discovery of, exact coincidence between the deductions from the theory and the known positions of dynamical science, deduced from principles diametrically opposite. We experience the same pleasure as when the doctrine of the fluxional calculus is proved to us by the coincidence of its results with those of common geometry, in all the cases which the latter can reach; and at each step of the inquiry, we acknowledge the hand of a master, in the simplicity and rapidity of the touches by which the effect is produced.

After giving these illustrations of the principle, which are all cases of the *minimum* of force, Euler proceeds to consider one in which

which the other species of equilibrium is exemplified. This is the problem which Signor Fontana has undertaken to investigate by common analysis, and upon the ordinary principles, in the paper now before us. Euler states that the solution, by such principles, would not be easy, and appears to draw from hence an inference in favour of the utility of Maupertuis's system. It is, however, extremely evident that he was in this respect mistaken; for the solution demands no very long or intricate investigation; and Signor Fontana has given a very elegant and simple investigation of it, both in the easier case, which Euler solved, and in the more general and abstruse conditions, which that great analyst did not take into consideration.

The problem which Euler says was proposed to him for solution, long before Maupertuis's theory occupied his thoughts, but which he seems rather unaccountably to have failed in solving until that theory attracted his notice, may be enunciated as follows: On a given fulcrum to place a given rod, loaded at one end by a given weight, so that the other end may remain at rest upon a vertical plane (or wall) given in position. Euler only considered the case when the rod was deprived of all weight, and when no friction interfered. In these circumstances, putting $b =$ the distance of the fulcrum from the wall: $a =$ the length of the rod; $z =$ the force applied to its extremity; and $x =$ the length of the part intercepted between the fulcrum and the wall, he easily deduced the equation.

$$z = \frac{a}{x}\sqrt{x^2 - b^2} \cdot - \sqrt{x^2 - b^2}. \quad \text{But}$$

$$\dot{z} = \frac{a\,b^2\,\dot{x}}{x^2\sqrt{x^2 - b^2}} - \frac{x\,\dot{x}}{\sqrt{x^2 - b^2}} = \frac{\dot{x}\,(a\,b^2 - x^3)}{x^2\sqrt{x^3 - b^2}};$$

And by the theory $\dot{z} = 0$. Therefore

$$x^3 = a\,b^2 \text{ or } x = \sqrt[3]{a\,b^2}$$

The solution was therefore reduced to finding a line whose cube was equal to a given parallelipiped; and the problem was thus resolved by Maupertuis's law. In fact, a very simple geometrical construction is obvious, and might be easily described by the intersection of a cubic parabola, whose parameter is equal to the length of the rod.

Signor Fontana, doubting the solidity of Maupertuis's law, investigates the problem by the arithmetic of sines. He easily obtains an equation, involving the same quantities as those in Euler's, together with the sine and cosine of the angle which the rod forms with the perpendicular from the fulcrum to the wall. From thence he exterminates the angular expression, just as Euler does

does the fluxion; and there remains the very same result as that above stated.

But our author proceeds to the general case, in which the rod is heavy, and the wall exerts friction. Representing the weight of the rod by m times its length, and the friction by n times the pressure, f being that pressure, and the other quantities being expressed as above, and p being the weight attached to the end of the rod, we obtain the following general equation for all the cases of the problem:

$$x^4 + 2\frac{a\,b^2\,(P + \frac{1}{2}\,m\,a)\,x^2}{P + m\,a} + n^2\,a^2\,b^2\left(\frac{P + \frac{1}{2}\,m\,a}{P + m\,a}\right)^2 x^2 + \\ + (n^2 + 1)\,a^2\,b^2\left(\frac{P + \frac{1}{2}\,m\,a}{P + m\,a}\right)^2 = 0.$$

In this equation, m or n, separately or together, may vanish; that is, the weight of the rod, or the friction, may one or both be supposed nothing. When $m = 0$, and $n = 0$ also, we get the equation formerly deduced. When $m = 0$, or the rod has no weight, but the friction continues, we have a singular paradox; P vanishes entirely from the equation, and leaves a solution quite definite, but altogether independent of the pressure exerted on the rod. If n vanishes (or the friction ceases) while the rod continues heavy, we get $x^2 = a\,b^2\left(\frac{P + \frac{1}{2}\,m\,a}{P + m\,a}\right)$, in which if P (or the weight) vanishes, m vanishes also; whence another parodox, that if there is no friction, and no weight attached to the extremity of the rod, the equilibrium is not at all affected by its own weight, but is the same, whatever that may be, or whether it exists at all or not. This problem is therefore completely solved, and solved much more easily and generally by ordinary rules, than by the principle of *minima* or *maxima* of forces; and Euler would evidently have seen the relations of the question in a more clear and extensive manner, had he not fettered himself by the theory which he was labouring to support.

We shall conclude with noticing a consequence deducible from the curvilinear or *local* construction of this problem. By an obvious process, we obtain an equation between y and known quantities of this form (y being a side of the right-angled triangle, whose hypothenuse is x, above investigated).

$y^6 + (3\,a^2 - b)\,y^4 + 3\,a^4\,y^2 + a^6 = 0$, put $3\,a^2 - b = P$, and $y^2 = Z$, and $a^2 = q$, the equation becomes $Z^3 + P\,Z^2 + 3\,q^2\,Z + q^3 = 0$; a very general cubic equation. Now the relations between y and a and b may easily be found by the solutions of Euler's problem above given; for these reduce this question to the extraction of a cube root. Therefore, the cubic equation now deduced

deduced may always be resolved by that simple process; or, in other words, we have a general method of solving any entire equation whose fourth term bears to the coefficient of its third term, the relation of the cube to three times the square of the same quantity.

ART. V. *The Triumph of Music: A Poem, in Six Cantos.* By William Hayley, Esq. Chichester. 1804.

FORTUNE has her favourites in the republic of letters as well as in the aristocracy of wealth. Desert is sometimes left, we are afraid, to pine in obscurity, while mediocrity is occasionally promoted to a share of public notice and indulgence, which appears surprising, when its claims come to be fairly investigated. To the latter class, we conceive the author of the poem before us to belong. His indefatigable industry during a long life, his character as a polite scholar, and his intimacy with men of the first literary eminence, are circumstances quite independent of the diviner inspiration of genius; but, in Mr. Hayley's case, they have so well supplied the deficiency, that his name carries to the general ear a sort of classical sound. The charm dissolves, however, upon a near examination, and leaves us to discover, in all the productions of his muse, a decided and invincible mediocrity. There is scarcely any passage, in all his metrical compositions, which may not be reduced, by a few slight transpositions, to sober sensible prose, without one distinguishable fragment of the scattered poet. Even in his earlier works, when the vigour of his fancy was unimpaired, there is a continual tameness of conception, and monotony of versification, that show he was not born for the higher flights of poetry.

In one point of view, indeed, we think our author greatly superior to many who excel him in poetical talents; and that is, as the annotator of his own works. The copious notes subjoined to his didactic poems are quite of a different character from the silly farrago which so often disgraces the volumes of our modern poets. They display a liberal and cultivated mind, and contain a most amusing fund of literary information, gleaned from an extensive and well directed course of reading. To them he is indebted for the best part of his fame: they prop the weakness of the poetry that produced them, and shed a reflected lustre on what shone but feebly by its own light. When Mr. Hayley refers us to a note, it is not an interruption, but a relief; and we gladly quit languid verse for agreeable prose. For these reasons,

we

we were sorry to see the present poem come naked into the world, and regretted that the dignity of its epic nature should have been thought to preclude the assistance of that body-guard which had so well protected the feebleness of former productions. As it is, it must stand or fall by its poetical merit alone; and we fear it is not likely to add a single sprig to the scanty wreath that already encircles the poet's brow.

The preface informs us, that 'it was the purpose of the author not to display all the various efficacy of music, but to commemorate one very striking example of its moral influence.' This declaration, and indeed the very title of the poem, prepared us to expect, that however diversified it might be by episodes, the efficacy of music should be the connecting principle throughout, and direct the winding up of the story. The example he alludes to, which he met with in the memoirs of some Italian musician, is nothing more than the circumstance of two hired assassins being turned from their purpose, by overhearing the music of their intended victim and his mistress. But we shall give it in the words of the author, as a fair specimen of the style and execution of the poem; for it is natural he should put forth all his powers on that which he regards as the most important part of the story: He is speaking of Lucilio and Venusia, the hero and heroine,

'It chanced one morn, a morn of awful note!
To sacred music they their souls devote.
With long delight, and zeal till then unknown,
Lucilio sung, in faith's sublimest tone,
The hymn that spoke his confidence in God.
And now the pavement near the door they trode:
But ere the quick Venusia reached the key,
She hears a step—she starts—she turns—and *see!*
In the lock'd chapel a strange figure stands;
She darts upon it with extended hands.
" 'Tis an assassin!" (she exclaims aghast)
" Fly, fly Lucilio, while I bind him fast!
Fly, ere his dark accomplices appear!"
With love superior to all selfish fear,
That made her tender arms an iron clasp,
She held the speechless Lucilio in her grasp.
Suddenly prostrate at Lucilio's foot,
The trembling Basil, for a moment mute,
Knelt, in the tears of penitence, and said,
Shaking with strong compunction, not with dread,
" We were assassins, but abjure the guilt;
Let tears atone for blood in purpose spilt!
Most true: our night in that dire purpose past;
We fixt this fatal morn Lucilio's last.

But

> But mark! how Heaven defeats the subtlest plan.
> By the blest talent of this godlike man!
> His harmony, inspired by angels, wrought
> Conversion in our souls surpassing thought,' &c. p. 49.

But this, so far from being the hinging point of the story, is narrated as a little subordinate incident in the second canto, and tends in no respect to advance the plot.

Music having so soon achieved its grand conquest, is obliged to content itself, during the remainder of the poem, with the inglorious task of filling up a vacant hour. Whenever the lover and his lady have nothing better to do, they sit down to the organ or piano-forte, and sing and play (Mr. Hayley assures us most enchantingly) to words of their own composition. Here is no triumph of music, except over the *ennui* of idleness; and, to have made even that victory in any degree probable, the charms of the music, we conceive, must have far exceeded those of the poetry. If any of our readers be curious to know the real story of this metrical narrative, he will probably be satisfied with the outline that follows.

Venusia, the heroine, is brought up by Donado, an old Venetian nobleman, as his own, but is in fact the daughter of Manfredi, who, having been the unfortunate cause of the death of an only son, had resolved to seclude himself from the world, and devote his life to atone for his involuntary crime. In prosecution of this plan, he sends his infant daughter to a distant nurse, who happened at the same time to have under her care an only daughter of Donado. The latter dying, Donado, whose enjoyment of a large fortune depended on his having a child, bribes the nurse to pretend it was Manfredi's daughter that had died, and adopts the neglected infant. These facts are unfolded in the course of the story: for the poem, in the true epic style, *in medias res rapit*, and opens at that eventful period when, as the author expresses it,

> 'To woman's height the young Venusia grew,
> (A form more lovely nature never knew!') p. 2.

Donado destines her to be the bride of a rich gouty old lord; but she is rescued from this fate by Lucilio, the hero of the poem, a man far above her own age, and who had already lost a wife and a daughter. He was first introduced to Venusia as her music-master; but they soon became enamoured of each other; a circumstance that was hastened by Donado's obstinate perseverance in the match he had proposed. After a faint struggle with filial duty (for there is not as yet the least suspicion against Donado's paternity,) Venusia consents to make her lover happy; and the marriage ceremony being privately performed, they repair to Milan, where they,

'With

. . . . . 'With delight,
Hide their endearments from the public sight.' p. 36.

Donado's rage upon the occasion is stern and inflexible; not a momentary gust of passion, but a fixed determination to sacrifice Lucilio to a revenge which absorbs every other principle of action. This is now the leading interest of the poem. We hear alternately of the sanguinary projects of the old villain; the various retreats in which the lovers eluded his vengeance, and the occupations and amusements with which they filled up the years of their concealment. Their last place of shelter is the retreat of Manfredi; and Donado having traced them thither, determines to execute his vengeance in person, and, disguising himself like a Turk, enters a shrine devoted by Lucilio to morning prayer. As the poem is now drawing to a close, the reader perceives the necessity of some revolution in Donado's character, and is prepared to find music once more triumphant. It would not have been easy indeed to make it probable, that a soul so hardened in guilt, which throughout the poem had never betrayed one symptom of goodness, should be softened and subdued by the magic of sweet sound; but the principle which does operate so sudden a change is still more unaccountable. He had supposed Manfredi confined by sickness; but he is mistaken; Manfredi appears before him; and the sight of this man, instead of exasperating his rage, which was the more natural effect, extinguishes all desire of revenge, and unexpectedly awakens in his mind a moral sensibility of a very amiable description. This transformation leads the various parties through the usual forms of explanation, confession, and reconciliation.

After this account of the plot, and specimen of the versification, we believe most of our readers will agree with us in thinking that the author would have saved himself a good deal of unnecessary trouble, had he given us the story in the common form of a novel. At present, it is nothing but a novel in rhyme; for we cannot call *that* poetry, where the glimmerings of fancy or poetical fire are so 'few and far between.' Nothing, indeed, but an ill directed ambition could have induced him to put on those fetters which he carries so ungracefully, that they are for ever clanking in our ears. The humbler plan we suggest would also have afforded him a better opportunity of introducing his lyrical pieces, according to the example of many who have adopted that method of embalming their fugitive poetry. But our author, *Mœonii carminis ales*, soared higher. It appears from the preface, that he considers it as an essential improvement, to diversify a long heroic poem with smaller pieces of various measure; and he presents the Triumph of Music as a grand experiment on the

the pubic taste which is likely to fix an era in the history of poetry. 'I have now (he says) made the experiment; but the full success of it is only to be learnt from the voice of our country.' The idea was perhaps well conceived in our author's particular case; for he seems conscious, by adopting it, that the great defect of his versification is monotony; and when he suspects his readers may be nodding under the effects of this powerful opiate, he applies a gentle stimulant in the form of a song or a sonnet. But we can never consent that the succedaneum of weakness should be erected into a rule of composition. There is, without doubt, a tendency to monotony in a long heroic poem; and it is one of the difficulties with which poets have to struggle. But it is a difficulty which our classical writers have not sought to get rid of by such inartificial contrivances; their ambition and glory have been, to overcome it by the vigour of their lines, and the variety of their cadence. The epic poets of antiquity were as much exposed to the danger of monotony as our modern rhymers. The hexameter verse must be managed with infinite dexterity, not to fatigue the ear. A schoolboy's verses may be perfectly correct in quantity; yet no man can read ten of them, without being struck with their heavy monotonus sound. Let him then take up Virgil, and read an equal number of his lines. He will find in the latter a richness and varied melody, which could only be effected by the consummate art of the poet. If Mr. Hayley's patchwork plan were at all consistent with taste, it is too obvious to have lain concealed for ages, in order to be revealed to a minor poet of the nineteenth century

As to the lyrical pieces themselves, they are not at all calculated to recommend the novelty of the plan. There are not fewer than seventy songs, sonnets, and hymns, scattered through the work. They seldom arise naturally from the story, but are pressed into the service, in a manner which plainly shows that the poem was made for them, rather than they for the poem. We look upon them as the sweepings of the author's port-folio, in which, for his credit, they should have rested for ever. A few of them, the author says, he found medicinal to his own mind under severe affliction, and these, on that account, notwithstanding the want of poetical language, are considerably interesting; for the sorrows of a parent are a subject sacred to sympathy and reverence. We shall give the following sonnet and song as specimens:

SONNET.

'Of the rich legacies the dying leave,
Remembrance of their virtue is the best;
How opulent am I in this bequest,
Which I from you, my buried friends, receive!
No force, nor fraud, can e'er my heart bereave

Of

Of this my noblest wealth! The miser's chest
To this is poor: this, hoarded and carest,
Irradiates life, forbidding grief to grieve!
God's kindest gift! I prize it as I ought,
And bless him that I hold it justly dear:
Reviewed in daily and in nightly thought,
I find it still with endless value fraught;
Still inexhaustible, though lavish'd here,
And still to be enjoyed in truth's eternal sphere.' p. 98.

SONG.

'There is, good heaven! a sacred charm
In that pure love we pay the dead,
Which may the rage of grief disarm,
Nor let her dark delirium spread:

'Tis when fair truth to her fond gaze,
In glory's light, her idol shows;
Then, listening to that idol's praise,
Grief feels a tender, proud repose.' p. 7.

In one or two more of the same cast, we meet with some pretty sentiments clumsily expressed; but the rest are trash, that scarcely deserve a place among Watts's Divine Hymns, or even the labours of a Grub-Street sonneteer. We cannot allow the piety of such hymns as the following to plead for their poverty.

HYMN.

'Lord! in whose hand are life and death,
So let me live, so let me die:
That love may grace my vital breath,
And faith and hope my final sigh!' p. 96.

There is a hymn in the 2d canto which seems to be a favourite of the author's. To give it a fair chance of becoming so with the reader, we shall extract it:

HYMN.

'Without the help of God,
Nor innocence nor faith are sure
Their being to retain;
Or *trial from the fiends* endure,
With no contagious stain:
Not safe the path by angels trod
Without the help of God!

Without the help of God,
The powers of wisdom, courage, youth,
Dissolve, *like steel by rust:*
The blazing eye of spotless truth
Is only rayless dust;
And *mental fire*, a *senseless clod*,
Without the help of God!

Without

Without the help of God,
All is decay, delusion all,
On which mankind rely:
The firmament itself would fall,
And even nature die
Beneath *Annihilation's nod*,
Without the help of God!' p. 37.

We have seldom seen a more exquisite mixture of tameness and extravagance than this. Indeed, we could not read a single page, without astonishment that a man, who has been so long a dabbler in poetry, and devoted his whole life to the study of the fine arts, should have sinned so grossly against good writing. Who could have expected such lines as the following from the pen of a literary veteran? Venusia has just vowed to Lucilio never to marry the old noble Zanetti:

'That sound exalted him to feverish bliss;
Grateful he gave her hand a burning kiss.
Intoxicated friendship made a trip;
He touch'd, in blind temerity, her lip;
But angry lightning from Venusia's eye,
Pierc'd his pale form—he could not speak or sigh!
* * * * In penitential awe,
The *mute instructor* hasten'd to withdraw:
The *modest maiden* would not bid him stay;
But for their meeting named a future day!' p. 14.

It would be swelling needlessly the length of an article, already out of all proportion to the importance of the subject, were we to point out, more in detail, the faults both of the story and of the language. The reader is sure to find them, if he opens the book at all. He will be immediately struck with that constant characteristic of an inferior poet, the abundance of insignificant epithets; such as, 'awful gratitude (p. 114.) hideous peril (119.) shuddering terror, *security's sure* veil,' &c. &c. He will find *pride*, on account of its convenience in rhyming, in high favour, furnished with a whole wardrobe of epithets, and appearing in a new suit almost every time he meets it. It is Venetian (3.) ecstatic (22.) speechless (42.) honourable (11.) zealous (31.) illusive (34.) sportive (113.) freakish (61.) connubial (146,) &c. He will discover no less sterility of fancy than want of taste, in the conduct of the similes and metaphors—that important part of poetical embellishment; for example,

'Quick, tho' seeming slow, arriv'd the morn,
When, *like a nightingale upon a thorn*,
The tender songstress ceas'd her song, to meet
Her kind preceptor.————' p. 16.

Yet, on reflection, this simile may not be so flat as we at first imagined; for perhaps the author meant to imply, not only that the

the songstress sung like a nightingale, but that she *sat upon thorns* till her lover arrived. The reader will also hear of 'fiery storms,' in which 'the mind is like a shrivell'd scroll,' (p. 21.) and of an assassin, 'through whose cleans'd heart unfeign'd repentance ran.' This is metaphor run mad.

Upon the whole, we sincerely hope, for Mr. Hayley's sake, that he has bid an eternal adieu to the Muses; for, whatever else the world may say of his poetry, it will not complain of his having written too little. A prose work is announced at the end of the present volume; and we shall be happy to find it such, as to redeem his credit with the public, and fix his reputation on the only basis that can give it stability.

ART. VI. *Essai sur les Advantages à retirer de Colonies Nouvelles dans les Circonstances presentes.* Par le Cit. Talleyrand.

Memoire sur les Relations Commerciales des Etats-Unis avec l'Angleterre. Par le Meme.

(*From the* Memoires de la Classe des Sciences Morales et Politiques de l'Institut National.)

THE name of the author gives these tracts no inconsiderable share of interest: but they derive a still more permanent claim to our attention, from the importance of their subject, and from their intrinsic merits. We have therefore judged it proper to present our readers with some account of them; and as they evidently belong to the same class of discussion, we have brought them together for examination, although they may appear to be separated by their titles.

On his return from America, whither he had emigrated during the first stage of the French revolution, M. Talleyrand seems to have been strongly impressed with the situation in which he found his countrymen, after the violence of the Jacobin times had subsided. Their minds were still in an unsettled and turbulent state; and there seemed great reason to dread both the commotions of those restless spirits whom the times had engendered, and the effects of that apathy which, in the great mass of the people, generally succeeds to extreme irritation. The latter of these topics, however, is but slightly touched upon; and, without considering the fatal consequences of the cooperation of these two evils, or reflecting on the impossibility of preventing a few factious men from placing their leader upon a throne which

which the general indifference might prepare, and the universal dread of new revolutions might fortify, Talleyrand (at the date of his work, only a speculative inquirer) directs his regards entirely to the means of providing a safe retreat for those unquiet spirits whom the revolution had left behind it. The state of the country in which he had lately resided, struck him as somewhat analogous to that of his own. He reflected on the singular ease with which all the violence of a revolutionary civil war had there subsided; and was naturally led to conclude, that industry is the grand pacificator, both of individuals and of nations; the best conservator both of domestic tranquillity and social peace. The impossibility of adopting direct measures for promoting new exertions of labour among the people at home, was too obvious to require any exposition; and the observations which he had made upon the fabric of society in the infant settlements of the American continent, suggested, as the best means of accomplishing the great end in view, a recurrence to the colonial system, then almost overthrown by the crimes and follies of the revolutionary government.

The papers now before us, are evidently dictated by this train of reflection; but they have assumed a more general form, and contain a variety of discussions upon the principles of colonization. Independent of the epigrammatic force and eloquence of their style, and of their more substantial merits as sound and ingenious speculations upon a subject of equal difficulty and importance, they cannot fail to interest us in their practical applications. They were the result of actual observation in countries where the author had access to the best information, or was actually engaged in affairs. They were drawn up with a view to influence the conduct of France, under a government in which he soon after bore an active part. Subsequent events prove, that they were not without effect in shaping the measures of that ambitious power. These tracts, it should be observed, however, appear in a form purely speculative; their reasonings are general and philosophical; formed indeed upon facts, but guided by large, scientific views; by an appeal to principles at every step; and by the kind of argument that inferior statesmen deride as theoretical, while their adversaries are conquering the world by the combinations to which it leads. The views of political economy by which our author seems to have been guided, are liberal and enlightened. He knows thoroughly the best doctrines of the science, and is fully impressed with their truth. It will be difficult indeed for our readers to believe that the writer of some of the passages which we mean to extract is a leading personage in the present fiscal administration of France.

And,

And, however much the recollection may lead us to lament so striking an instance of talents and knowledge enslaved by sordid principles, it is comfortable to think, that there are among the rulers of that country, some whose lights are superior to their conduct, and that the justness of their original views may one day triumph over the gross ignorance and petty ambition of their more powerful coadjutors.

The general Essay on Colonies, contains a deduction of the advantages which must accrue to France, from a careful attention to the colonial system; and points out the principles that ought to guide her in the formation of new settlements. The memoir upon the relations between England and America, is apparently written with a view of recommending, by a practical exemplification, the general principles of colonization; but the argument is couched under the form of an attempt to explain several political facts which the author remarked during his travels over the greater part of North America; and truly, if the former of these papers makes us wish that every statesman, and especially the present rulers of France, were actuated by such liberal views as the author inculcates, it is impossible to read the latter without lamenting that no traveller has ever appeared so capable as M. Talleyrand, of instructing his country by the scientific observation of foreign nations; and that he himself has not devoted his life to a pursuit pointed out alike by his genius and his acquirements. We express our admiration of this man's writings without any fear of misconstruction. It would be as foolish (were it as possible) to shut one's eyes to the lustre of talents, as to despise an enemy who is strong by their aid. Great as the resources of France are, if they were not wielded by such men as Talleyrand, she would soon cease to be the object of that watchful anxiety which in the actual posture of affairs, is the wisest part of wisdom.

Two great objects, according to our author, are to be gained by the planting of new colonies, in the present state of France. A vast body of people has been either thrown idle by the revolution, or so corrupted by habits of intrigue and excesses of violence as to be now incapable of regular industry. To open an egress for these troublesome spirits, and at the same time to derive profit from the qualities which render them useless and dangerous at home, is the double advantage of planting new settlements. The example of America, by a striking analogy, points out the former benefit; the latter is sufficiently clear of itself. In the United States, our author was surprised to observe, that a long and violent civil war had left scarcely any trace of its existence in the character or intercourse of the various factions which

divided the people. No hatred or animosity was perceivable among individuals; no turbulence or agitation of character had been permanently engrafted on the sober, solid habits of the colonists. None of those symptoms, in short, were observable, which, for ages after a violent and general conflict, always endanger the internal security of nations whose structure has assumed a regular form and consistency. The profound remark of Machiavel appeared for once to fail, 'that every revolution contains the seeds of another, and scatters them behind it.' The peculiar situation of the American people furnishes an easy explanation of this happy peculiarity. Our author justly observes, that though the change no doubt excited all those revolutionary dispositions which in other countries have prolonged the reign of anarchy, and formed abundance of characters fitted for profiting by such an alteration of popular habits, yet the vast extent of the country afforded a constant vent for the most restless activity in projects useful to the community, and tempting to the individual; drew off to a distance from the theatre of dissensions those whose violence had not been calmed by victory; and (he might have said) secured an agreeable retreat to the numerous remains of the Royalist party. He eloquently describes that continent as a

—pays vaste et nouveau—où des projets aventureux amorcent les esprits, où une immense quantité de terres incultes leur donne la facilité d'aller employer loin du theatre des premieres dissensions une activité nouvelle, de placer des esperances dans des speculations lointaines, de se jeter à la fois au milieu d'une foule d'essais, de se fatiguer enfin par des deplacemens, et d'amortir ainsi chez eux les passions revolutionaires.'

Now, as France, with much more of that turbulent spirit, has not at home the same opportunities of quenching it, our author infers that it should be drawn off by colonial establishments, the only expedient which can enable a well peopled and cultivated country to unite the advantages peculiar to new settlements with those possessed by full grown communities. He rapidly sketches the reasons that have induced the various emigrations recorded in history, and finds that they all owed their origin to far less pure motives than those which at present concur in recommending the scheme to France. The violence in which many of those plans originated, and the total failure of every one that did not soon assume a milder and juster aspect, he holds up as a lesson well worthy of attention. All colonial measures, according to him, should begin with the fair and open offer of a settlement from Government; and he states it as a striking proof, how essential freedom of choice is to the success of such plans, that those ancient republics which were constrained to send out colonies, by the narrowness of their territory, proposed the emigration as an allurement,

lurement, and did not enforce, by positive law, even what was necessary for the existence of the state. Let us, says he, imitate the policy to which the most prosperous of those establishments owed their origin, and avoid, as much as possible, the errors which modern nations have committed in following the example of the ancients. From sage measures of this sort, he expects every advantage will result to France. She has only to propose a colony, and the offer will be joyfully received. In describing the probability of this favourable reception, he enumerates rapidly, but with great force of language, and perfect accuracy, all the motives which concur to recommend such an emigration to so many descriptions of his countrymen. The passage is too striking, both for diction, and for acute, comprehensive thought, to be omitted in an account of these speculations; nor shall we attempt to injure it by a translation.

'C'est en nous emparant de ce qu'ont de plus pur ces vues des anciens, et en nous defendant de l'application qu'en ont faite la plupart des peuples modernes qu'il convient, je pense, de s'occuper dès les prémiers jours de la paix de ce genre, d'etablissemens qui, bien conçus et bien executés, peuvent être après tant d'agitations la source des plus precieux avantages.

'Et combien de Français doivent embrasser avec joie cette idée! combien en est-il chez qui, ne fut-ce que pour des instans, un ciel nouveau est devenu un besoin! et ceux qui, restés seuls, ont perdu, sous le fer des assassins, tout ce qui embellissoit pour eux la terre natale; et ceux pour qui elle est devenue infeconde, et ceux qui n'y trouvent que des regrets, et ceux même qui n'y trouvent que des remords; et les hommes qui ne peuvent se resoudre à placer l'esperance là où ils eprouverent le malheur; et cette multitude de malades politiques, ces caracteres inflexibles qu'aucun revers ne peut plier, ces imaginations ardentes qu'aucun raisonnement ne ramene, ces esprits fascinés qu'aucun evenement ne desenchante; et ceux qui se trouvent toujours trop reserrés dans leur propre pays; et les speculateurs avides, et les speculateurs aventureux; et les hommes qui brûlent d'attacher leur nom à des découvertes à des fondations de villes, à des civilizations; tel pour qui la France constiuée est encore trop agitée, tel pour qui elle est trop calme; ceux enfin qui ne peuvent se faire à des egaux, et ceux aussi qui ne peuvent se faire à aucune dependance.

'Et qu'on ne croie pas que tant d'élémens divers et opposés ne peuvent se reunir. N'avons-nous pas vu dans ces dernieres années depuis qu'il y a des opinions politiques en France, des hommes de tous les partis s'embarquer ensemble pour aller courir les mêmes hasards sur les bords inhabités du Scioto? Ignore-t-on l'empire qu'exercent sur les âmes les plus irritables, le temps, l'espace, une terre nouvelle, des habitudes à commencer, des obstacles communs à vaincre, la necessité de s'entr'aider remplaçant le desir de se nuire, le travail qui adoucit l'âme, et l'esperance qui la console, et la douceur de s'entretenir du pays qu'on a quitté, celle même de s'en plaindre,' &c.

But if the finding employment for the persons described in this passage is in itself a great advantage to the mother country, our author conceives the acquisition of rich and flourishing colonies, more especially in the present circumstances of France, to be no less important. The natural tendency of colonial settlements to throw off their dependence, has received too many illustrations from the events of the last thirty years, not to present governors with one of those near and certain prospects which ought to exercise a practical influence over their immediate arrangements. The loss of America to England, M. Talleyrand plainly deduces from causes neither accidental nor peculiar; and it is evident, from the whole tenor of his reasonings, that he views the attempts to restore order in the French West Indies, as neither likely to succeed in the meantime, nor, even if attended with temporary success, as sufficient to ward off, for any considerable period, the blow which circumstances, beyond the reach of edicts and armies, have prepared in the western wing of the French empire. The radical vices of the political system in the islands, their extent, position and climate; above all, the structure of their society; are clearly what he means by '*cette force des choses qui fait la destinée des etats, et à laquelle rien ne resiste.*' While, therefore, he recommends a due attention to measures which may aim at a reparation of the manifold evils produced by the impolicy of the revolutionary government in St. Domingo and Gaudaloupe, he enforces the necessity of being prepared for the more likely event, a general failure of all such plans, and a total destruction of the French colonial power in the new world. Let France look about her, says this wary statesman, and see if there are no other countries where new settlements may conveniently be undertaken as a substitute for the colonies which may so soon be lost; and let those colonial establishments be formed upon principles which shall prevent the recurrence of the disasters that have befallen the West Indies. It is for the purpose of showing what are the right kinds of colonies, what are the settlements most safe and secure in themselves, and most likely to ensure a continuance of commercial relations, even after they may have become independent of the mother country, that the memoir upon the United States is evidently conceived. The result of the inquiry is an inference in favour of agricultural settlements where the natives of the soil are able to cultivate it; and a warning against all such schemes as those to which the negro system owes its origin. The territory where these plantations may be settled, is plainly described. After a few words about the islands along the coast of Africa, M. Talleyrand seems to fix upon Egypt as the proper spot. Choiseul, it is well known, foresaw

foresaw the probable separation of all the American colonies, without exactly predicting the manner in which the islands were to be lost; but he was so impressed with the likelihood of this event, that he entered into measures for the acquisition of Egypt as a settlement which might serve to France instead of all her West Indian territory, and for the same purposes. Talleyrand, nearer the fulfilment of this prediction, and more accurately acquainted with the manner in which it was to be accomplished, asserts as a truth beyond all dispute, that sooner or later the emancipation of the negroes must overthrow the cultivation of the sugar colonies; and adds, 'il est politique d'aller au-devant de ces grands changemens, et la premiere idée qui s'offre à l'esprit celle qui amene plus de suppositions favorables, paroît être d'essayer cette culture aux lieux mêmes où nait le cultivateur.' Let it be recollected, that the Egyptian expedition was undertaken a few months after this memoir had been read to an assembly to which the captain of the enterprise belonged; and that the author of these opinions was actively engaged in the government which planned the conquest; little doubt will remain of a position so well supported by its internal evidence, though obstinately discredited by most of our political reasoners, that the great and ultimate object of the capture of Egypt was the settlement of a colony which might serve as a refuge for the agriculture of the West Indies. It is difficult to say whether the view of proceeding against India from that quarter was ever in the contemplation of the French government further than as a possible accessory to the main project,—an incidental and distant advantage, which might render Egypt still more valuable, but was not essential to its importance. Enough was surely gained by that memorable expedition, if its success secured to France the finest colony in the world; raised her to the height of commercial prosperity, from an almost total annihilation of her trade; enabled her to sacrifice all her expensive and fickle dependencies in America, without a single inducement to make one additional struggle for their preservation; and gave her the certainty of ruining in a few crops all the colonial prosperity of her rival. To consider this as the leading, and even the ultimate object of the Egyptian plan, can now no longer be reckoned chimerical; nor ought this confirmation from external evidence of a position in itself so well founded, to diminish our exultation in the defeat of the enterprise, or our precautions against its repetition. On the contrary, it may with safety be asserted, that the utmost risk to which our East Indian settlements could ever have been exposed from the existence of a European colony in Egypt, would have been nothing, when compared with the certain advantages they must have

have derived from such a neighbourhood; while the ruin of all our West Indian possessions was the inevitable and fatal consequence of cultivating that fertile and extensive country. It is not to be expected that schemes so systematically formed, and upon such deep-laid foundations, will be easily given up. The Egyptian plan has too many solid recommendations, and more especially since the new failure of the French government in the West Indies, to be abandoned, because it once miscarried in a manner nearly unaccountable. The extent of the calamity which must result to England from its success, can never be fairly estimated by those who obstinately persist in placing their fears on the wrong side of the world. But all those who dread the accomplishment of the scheme, from whatever motives,—whether from viewing Egypt as the key of India (an idea which some affect to understand,) or from regarding its cultivation as incompatible with the colonial system of England in the west, must unite in recommending preventives, rather than remedies; in despairing of once more retaking the province with an inferior force; and in wishing that the plea of necessity may be listened to, when it shall be urged as a reason for England herself seizing upon Egypt, should no other means remain of saving it from the dominion of France.

There is some inaccuracy, it must be observed, in the view of ancient policy which M. Talleyrand has taken. He has proceeded upon the common idea that the ancient republics which sent forth colonies were too full of inhabitants; that want of subsistence began to oppress them; and that the government, alarmed at the prospect of famine, invited the citizens to emigrate, and settle in distant countries. That the smallness of their territory, and the progress of population were the general remote causes of almost all such schemes, cannot be denied; but it is very clear, that they were neither the immediate actuating principles, nor the principles kept in view by the rulers in the foundation of colonial establishments. The increasing disproportion between numbers of inhabitants and means of subsistence, is felt in a very indirect manner, and never attracts the notice of governments. A famine, indeed, like a plague, or any other casualty, makes rulers think upon the comforts of the lower orders, and has generally made them think in such a way as to occasion new calamities of the same kind. The general fear of accidental scarcity has often the like bad effect, and induces the adoption of measures which ensure and aggravate the evil apprehended. But no government ever attended much to those symptoms by which the disproportionate increase of population begins to make itself known in old countries. The gradual fall

of

of wages, the diminution of profits upon stock, the difficulty slowly augmenting of finding employment either for talents, industry, or wealth; these are the great marks of an overstocked community, and they proceed too insensibly to attract the notice of rulers. When men feel those inconveniences and hardships so pressing as to overcome their love of home, they naturally look out for a new residence. They do not wait till actual famine drives them from their country; still less do they wait until the government has provided a retreat. The spirit of adventure, and the love of change, always tempt the first settlers. It is these principles (and not the government) which found the colony, to which, fear of want may in the end make others less restless and daring resort. Instead of praising the ancient republics for not forcing their subjects to emigrate, we ought only to commend them for not checking the spirit of emigration, which causes, unattended to by the government, were exciting. It was not the government which felt for the people, and gave an issue to their overgrown numbers; it was the people who felt the diminution of their happiness at home, and induced the government to employ them abroad, or permit them to employ themselves. When the rulers interfered any farther,—when they began the scheme, it was never with a view to relieve their subjects, but with an eye to extension of territory and the subjugation of foreign states.

When our author contrasts the conduct of modern nations with that of the ancient republics towards their colonial establishments, and asserts that modern colonies have been peopled by the vices rather than by the wisdom of the mother country, he evidently means to blame the treatment of the natives, in whose territory the colonies were settled, as well as the oppressions which generally promoted the emigration. Thus, he does not accuse Spain and Portugal of peopling their colonies by persecuting their own subjects, but only of laying waste the continent and islands of America in order to found their new dominions. In arguing, however, for the advantages of extending the colonial system, he does not keep this general remark sufficiently in view. He seems to think, that the sending a French colony to any part of the globe, is fully justified by a proof that the plan is useful to France. A word is indeed said about *negotiation*; but the actual conduct of the government to which our author, immediately after writing this paper, acceded, is a sufficient proof that his plan referred not to matter of right, but of power. What inconsistency can be greater than first blaming Spain for seizing South America and oppressing the Indians, and then stripping a friendly power of its finest province, and butchering thousands of negroes in the West Indies?

But

But nothing can be more liberal and enlightened than the principles which our author proceeds to recommend for the conduct of France, in the proposed schemes of colonization. Without enumerating the remarks which he makes upon this important part of the subject, we shall only extract the following summary of his commercial opinions, after premising that the whole of the tract is conceived in the same spirit.

'C'est donc sur la connaissance anticipée des interets reciproques, fortifiés par ce lien si puissant d'origine commune, que l'etablissement doit être formé, et sur la force de cet interêt qu'il faut compter pour en recueillir les avantages. A une grande distance, tout autre rapport devient, avec le temps, illusoire, où est plus dispendieux que productif: ainsi point de domination, point de monopole; toujours la force qui protege, jamais celle qui s'empare; justice, bienveillance; voilà les vrais calculs pour les etats comme pour les individus, voila la source d'une prosperité reciproque. L'experience et le raisonnement s'unissent enfin pour repousser ces doctrines pusillanimes qui supposent une *perte* par-tout où il s'est fait un *gain*. Les principes vrais du commerce sont l'opposé de ces prejugés: ils promettent à tous les peuples des avantages mutuels, et ils les invitent à s'enrichir tous à la fois par l'echange de leurs productions, par des communications libres et amicales, et par les arts utiles de la paix.'

We recommend a careful perusal of this passage to all those who are engaged in regulating the commercial policy of states, and especially we would recommend it to the attention of M. Talleyrand himself, an active minister in the government which, of all others, seems influenced by the most pitiful views of mercantile affairs, which is exerting its influence in favour of the very worst system of restraint, and endeavouring, by every means, to revive the most pernicious of the errors long ago exploded in the speculative as well as the practical branches of political economy.

We have already remarked, that the evident object of the memoir upon the North American commerce, is to point out the kind of colonial system which is best calculated to secure a beneficial intercourse between the mother country and the colonies, even after the state of political dependence is at an end. Viewing a separation as the natural consummation of all such plans, our author is anxious to explain, how the relations of trade may be made to survive this event; and he examines, at great length, the circumstances which have maintained the connexion between England and the United States, long after the cessation of their political ties. Considered merely as a speculative explanation of the subject, this discussion is extremely beautiful. The fact to be accounted for, that since the American war, the trade between England and the United States has more than doubled, is certainly explained in a manner perfectly satisfactory. The American

can colonies were entirely English. They were knit to the mother country, not by laws and governments, but by identity of origin and language, similarity of character, habits, and political institutions. The English manufactures were necessary to countries utterly destitute of all but agricultural industry; the English merchant sold cheaper and on longer credit than any other in the world. Not only the best goods for the money were to be had from him, but goods of such excellent quality were not to be had for money in any other quarter. Not only prompt payment was dispensed with by the English trader, when all other dealers insisted on it, but the former regularly allowed his American customers to retain the use of his capital until it had yielded the gross profits, and then was satisfied with a smaller portion of the gain for his net allowance than other lenders could afford to take. All these advantages, the consequences of established skill and long experience, with a great stock, and old habits of mutual dealings, were sufficient to preserve the mercantile connexions between the mother country and her late colonies, in full force, even if the powerful ties of language, manners and blood, had not united their influence in the same direction. Compared with these bonds of attachment, what were the obligations which the colonies owed to France for assisting them in throwing off the yoke of Great Britain? The Americans, indeed, never believed that France was their real friend; they only gave her credit for being the enemy of England. But, although they had acknowledged the full extent of their debt, and felt the utmost gratitude of which their nature admitted, would such feelings have followed them into their counting-houses and warerooms? With every eye streaming out in love for their deliverers, would they have altered one inch the course of a single penny, destined, like all the pence of all the traders and all the consumers in the world, to follow, not the objects of their attachment, but the cheapest goods, and the easiest creditors? There is no wonder, then, that the trade between England and America should have continued in its wonted channel, in spite of their political separation, and of the political services of France. That channel is never open to any public influence, and feels only the force of one motive, individual interest.

Such being the substance of our author's general statements, and so undeniable their accuracy, we are the more surprised at his having intermingled with them a considerable portion of erroneous doctrine, not only palpably unfounded, but for the most part repugnant to those very remarks, as well as unnecessary to the main object of the discussion. The mistakes into which he has fallen, are chiefly the three following.

In

In the *first* place, He blames the old government of France, for having prepared, by its impolitic conduct, the renewal of the commercial relations between England and the United States. France, according to him, should have endeavoured to multiply and extend the connexions which, during the war, she had established with the people of America. Instead of this, she began to fear the introduction of those principles at home which she had fomented abroad; and discouraged all further intercourse. Now although this discouragement of intercourse was certainly a ridiculous, as well as impolitic measure, it would be difficult to show what active means could have been used to prevent the renewal of the trade with England, or even to increase, in any sensible degree, the French commerce with America. In the face of all the circumstances already stated, the force of which must have been omnipotent in favour of the English market, even if France had spent her whole revenue in senselessly pushing her American trade by encouragements, how can it be supposed that the new relations between America and England could be in the least degree affected by any measures which the French government might pursue? Unless the *ancienne regime* possessed the power of making the merchants richer, the manufacturers more skilful, and the people more English than the English themselves, a feat which *lettres de cachet* have never been known to perform; it cannot be blamed for not having drawn away the Americans from the markets of Great Britain. For the same reason, we must confess our inability to comprehend how the following proposition has been deduced from the doctrines above analyzed, inasmuch as it appears to be in direct repugnance to them.

'It is a consequence of these statements respecting America,' says M. Talleyrand, 'that the conduct of government during the first years of peace, determines the commercial relations of the state; and if the rulers cannot seize the moment for turning the period of tranquillity to their account, it almost inevitably operates against the best interests of the country.'

Secondly, In mentioning the long credits allowed by English traders to their American correspondents, our author remarks, that they no doubt are obliged to make up for permitting their capital to lie out, by charging so much more profit upon the transaction. This is a very strange inadvertency in one so well acquainted with political economy, and with the details of trade. If the English capitalist reimbursed himself by an advance of profit for the long credit which he gave his customer, this surely could not be called an accommodation. The long credit is exactly a diminution of profit; it is one of the ways in which a great

great competition of capital, in a well stocked country, tends to bring down the gains of each trader. France or Spain could give as great credit as Holland or England, were they to charge higher in proportion as the term of payment was delayed,—were they, in fact, to charge interest for the loan. It is because, without this additional charge, England can afford to sell at long credits, and to buy at ready money, that she pushes her trade where France cannot reach. So far, then, from the English merchants repaying themselves for the long credit which they give their American customers, this credit, unrecompensed, is the cause of their capital finding employment in the American states, and the consequence of that capital being very extensive. M. Talleyrand seems to think it voluntary on the part of the creditor; an accommodation which he allows his debtor for a certain consideration. On the contrary, it is a matter of necessity, and is forced upon him by the competition of other capitalists, while it is rendered practicable by the great extent of his own stock.

In the *third* place, Our author falls into an error of a much more general and fundamental nature, in stating the progress of the American commerce with England. Instead of simply asserting that the mercantile relations between the two countries; interrupted by the war, were revived after the peace, and continued as close after the independence of the United States, as they had been during the existence of the colonial government; he assumes that those relations were multiplied and extended in consequence of the separation, and that Great Britain was therefore a gainer by that event. He only takes care to warn France not to reckon upon a similar gain when she gives up her colonial dominions; observing, with great justice, that the cases of the continental and insular settlements are by no means parallel. The fact upon which this doctrine is founded, does, however, in no degree warrant such an inference. The consumption of English goods in America had increased when our author wrote, to three millions Sterling, from less than one half the sum, its amount after the peace of Versailles. But where is the proof that the same augmentation would not have taken place though the colonial system had been preserved? It surely is not in consequence of the change, that the population of the States goes on doubling every twenty-five years; for, before the rupture, the increase of numbers proceeded at a rate somewhat more rapid, from the mere circumstance of the total amount being considerably less. Nor can the substitution of a primary for a subordinate form of government, have promoted the clearing of the forests, when, before the revolution, ground was constantly prepared

prepared for the tens of thousands which each year added to the mass of the inhabitants. And if the freedom of navigation be suspected of having augmented the American wealth, it must be shown, in the first place, that all our author's own reasonings on the closeness of the voluntary connexion between England and America are false; and that what he justly terms the *voluntary monopoly*, has no existence. In truth, this monopoly which has survived the navigation laws, is the clearest possible proof, that the only effect of those laws was to enforce what must have taken place naturally. If a trifling commerce be now carried on by American traders with foreign nations; and if, in consequence of its profits, the Americans are enabled to buy a little more from England than they otherwise could have done, the difference is probably more than counterbalanced by two circumstances, both effects of the revolution,—the exclusion of the Americans from a free trade with one of their best markets, the British West Indies,—and their receiving the articles of foreign growth at first hand, instead of getting them, as formerly, through the medium of the mother country. The former of those circumstances has injured both the growth of the United States, and of the colonies which remain dependent; the latter has been favourable to the United States, but has been attended, of course, with a slight direct detriment to Great Britain; and this must be set off against the indirect advantages which she reaps from the benefit which the same circumstance confers on the North Americans. The effect of both these circumstances upon Great Britain, taken together, must obviously turn the balance of the profit and loss arising from the free trade of the Americans somewhat against her. She indeed retains the power of admitting them to a full share of the West Indian commerce: but the question is, whether, in point of fact, the increase of demand for British goods has been owing in any degree to the independence of North America; and, indeed, the possible advantages which England may derive from a change of her navigation laws, in favour of the United States, can no more enter into a list of the good effects produced by the revolution, than the advantages she might have derived from a change of the same laws in favour of the North American colonies, can enter into a list of the good effects which would have accrued from a continuance of their dependence. We are therefore decidedly of opinion, that M. Talleyrand's assumption (for he does not argue at all to this point) of the superior closeness of mercantile connexion between Britain and America, in consequence of their political separation, is entirely unfounded. That the natural circumstances of relationship, which arose out of the original

ginal connexion, maintained unbroken the intercourse between the two countries, and permitted their commerce to go on increasing as rapidly as it would have done, had the ancient ties of colonial subordination subsisted, is the utmost extent of the conclusions which the facts and arguments warrant, even as stated by M. Talleyrand himself. No attempt is made to demonstrate, that the change has augmented those relations of commerce; and although it were proved that such had been the effects of the revolution, still it would remain to show that Great Britain had been a gainer by the loss of her American dominions; in other words, that profit upon stock is all a great nation has to think of in the management of its affairs.

We shall here take our leave of these interesting tracts; but we cannot resist the temptation of presenting our readers with a specimen of those talents for philosophical observation and for general description of manners, which made us regret, in a former part of this article, that M. Talleyrand had not devoted himself to supply the great desideratum in modern literature, a scientific political traveller. The following picture of American society is indeed very striking: and the character of the planter is placed in a point of view considerably less romantic than that in which both American and European dealers in sentiment have been accustomed to give it. We have only to premise, that when M. Talleyrand blames the inaccuracy of classing fishing with agriculture, he forgets that the arrangement never bore any reference to the effects of the two pursuits upon the character or manners of the persons engaged in them; it related entirely to the connexion of those employments with national wealth.

'Que l'on considere ces cités populeuses remplies d'Anglais, d'Allemand's, d'Irlandais, de Hollandais, et aussi d'habitans indigenes; ces bourgades lointaines, si distantes l'un de l'autre; ces vastes contrées incultes, traversées plutôt qu'habitées par des hommes qui ne sont d'aucun pays: quel lien commun concevoir au milieu de toutes ces disparités? C'est un spectacle neuf pour le voyageur qui, partant d'une ville principale où l'etat social est perfectionné, traverse successivement tous les degrés de civilization et d'industrie qui vont toujours en s'affablissant, jusqu'à ce qu'il arrive en tres peu de jours à la cabane informe et grossiere construite de troncs d'arbres nouvellement abattus. Un tel voyage est une sorte d'analyse pratique et vivante de l'origine des peuples et des etats; on part de l'ensemble le plus composé pour arriver aux elemens les plus simples; à chaque journée on perd de vue quelques unes de ces inventions que nos besoins, en se multipliant, ont rendues necessaires; et il semble que l'on voyage en arriere dans l'histoire des progrès de l'esprit humain. Si un tel spectacle attache fortement l'imagination, si l'on se plait à retrouver dans la succession de l'espace ce qui semble n'appartenir qu'a la succession des temps, il faut se resoudre à ne voir que tres peu de liens sociaux, nul

nul caractere commun, parmi des hommes qui semblent si peu appartenir à la même association.

' Dans plusieurs cantons, la mer et les bois en ont fait des pecheurs ou des bûcherons ; or de tels hommes n'ont point, à proprement parler, de patrie, et leur morale sociale se reduit à bien peu de chose. On a dit depuis long-temps que l'homme est disciple de ce qui l'entoure ; et cela est vrai ; celui qui n'a autour de lui que des deserts, ne peut donc recevoir des leçons que de ce qu'il fait pour vivre. L'idée du besoin que les hommes ont les uns des autres n'existe pas en lui ; et c'est uniquement en decomposant le metier qu'il exerce, qu'on trouve le principe de ses affections et de toute sa moralité.

' Le bûcheron Americain ne s'interesse à rien : toute idée sensible est loin de lui ; ces branches si elegamment jetées par la nature, un beau feuillage, une couleur vive qui anime une partie de bois, un verd plus fort qui en assombrit une autre, tout cela n'est rien : il n'a de souvenir à placer nulle part : c'est la quantité de coups de hache qu'il faut qu'il donne pour abattre un arbre, qui est son unique idée. Il n'a point planté ; il n'en fait point les plaisirs. L'arbre qu'il planteroit n'est bon à rien pour lui ; car jamais il ne le verra assez fort pour qu'il puisse l'abattre : c'est de detruire qui le fait vivre : on detruit par-tout : aussi tout lieu lui est bon ; il ne tient pas au champ où il a placé son travail, parce que son travail, n'est que de la fatigue, et qu'aucune idée douce n'y est jointe. Ce qui sort de ses mains ne passe point par toutes les croissances si attachantes pour le cultivateur ; il ne suit pas la destinée de ses productions ; il ne connoît pas le plaisir des nouveaux essais ; et si en s'en allant il n'oublie pas sa hache, il ne laisse pas de regrets là où il a vecu des années.

' Le pecheur Americain reçoit de sa profession une ame à peu pres aussi insouciante. Ses affections, son intêret, sa vie, sont à coté de la societé à laquelle il croit qu'il appartient. Ce seroit un prejugé de penser qu'il est un membre fort utile ; car il ne faut pas comparer ces pêcheurs-là à ceux d'Europe, et croire que c'est comme en Europe un moyen de former des matelots, de faire des hommes de mer adroits et robustes : en Amerique, j'en excepte les habitans de Nantuket qui pêchent la baleine, la pêche est un metier de paresseux. Deux lieues de la côte quand ils n'ont pas de mauvais temps à craindre, un mille quand le temps est incertain, voilà le courage qu'ils montrent, et la ligne est le seul harpon qu'ils sachent manier : ainsi leur science n'est qu'une bien petite ruse ; et leur action, qui consiste à avoir un bras pendant au bord d'un bateau, ressemble bien à de la faineantise. Ils n'aiment aucun lieu, ils ne connaissent la terre que par une mauvaise maison qu'ils habitent, c'est la mer qui leur donne leur nourriture : aussi quelques morues de plus ou de moins determinent leur patrie. Si le nombre leur paroît diminuer à tel endroit, ils s'en vont, et cherchent une autre patrie où il y ait quelques morues de plus. Lorsque quelques ecrivains politiques ont dit que la pêche etoit une sorte d'agriculture, ils ont dit une chose qui a l'air brillant, mais qui n'a pas de verité. Toutes les qualités, toutes les vertus qui sont attachées à l'agriculture manquent a l'homme qui se livre

livre à la pêche. L'agriculture produit un patriote dans la bonne acception de ce mot; la pêche ne sait faire que des cosmopolites.'

We are far from considering every part of this picture as accurately drawn from nature. On the contrary, there are not a few of its lines which resemble a composition rather than a portrait. But in the general, it is unquestionably like; and every touch, even the most partial, betrays the hand of a master. Who that looks at it does not recognize, to take only a subordinate merit, that turn of expression which has gained for its author the reputation of being indisputably the wittiest of the present generation?

ART. VII. *Flora Britannica.* Auctore Jacobo Edvardo Smith, M. D. Societatis Linneanæ Preside, &c. Londini, tom. I. & II. 1800; III. 1804. 8vo. White.

FEW countries can boast of such a variety and profusion of plants as the British Islands. This circumstance has been noticed by all the botanists who have attended to the enumeration of our indigenous vegetables; and though it unquestionably increased the difficulty of their undertaking, appears only to have excited the ardour of scientific men; and from this cause has arisen both the number and the excellence of our *Florœ*.

The first professed enumeration of the British plants, with which we are acquainted, was by William How, in his *Phytologia Britannica*, Lond. 1650, 8vo. In 1660, Ray began his botanical career, by publishing his *Catalogus plantarum circa Cantabrigiam nascentium*, Cant. 8vo. He was followed, in 1667, by Merret, who extended his researches indeed throughout every kingdom of nature, in his *Pinax rerum Britannicarum*, Lond. 8vo. A few years after this, Ray enlarged his original plan, and produced the *Catalogus plantarum Angliæ*, Lond. 1670, 8vo.

The preceding works were only catalogues, with the addition of the places of growth; but Ray, who saw the advantages of systematic arrangement in the recent publication of Morison, and in his own *Historia plantarum*, published in 1690 the first edition of the *Synopsis methodica stirpium Britannicarum*, Lond. 8vo. In this he gave, not only the characters of the several genera, but also the synonyms and uses of the plants, with several other remarks, tending to facilitate the progress of the student. A second edition of this justly celebrated work appeared in 1696: and as Ray had amended his system in 1703, a third edition of the Synopsis, rendered agreeable to this emendation, and with large additions,

additions, was published by Dillenius in 1724. This work has always been esteemed one of the most complete *Floræ* that any country had at that time produced.

Linnæus having promulgated, with great success, several new doctrines, in regard to the disposition and denomination of plants, was speedily followed by a number of English botanists. It must indeed be allowed, that natural history is highly indebted to that celebrated Swede. By a scientific inquiry into the method pursued by nature, the genera of plants were fixed by him upon a firm foundation, far different from the vacillatory methods of his predecessors. In this respect his system is indisputably superior to that of Ray. But in justice to the latter, as one of the most industrious naturalists that Britain has ever produced, we must remark, that these two systematists had different objects in view. Linnæus sought for the most proper characters of the natural genera of plants, however difficult of investigation. Ray, on the contrary, paid more attention to conveniency; his primary object being to introduce young students to an acquaintance with the names that had been given to plants, without being very anxious whether that knowledge was acquired in an empirical or philosophic manner. In the higher divisions, viz. the classes and orders, these two naturalists appear to have changed characters: here, Ray attempted to follow the divisions of nature itself, while Linnæus adopted an artificial system, of which facility is the principal recommendation. The observation and expression of the number of the parts, are certainly capable of a more exact determination than most of the other generic characters. This has occasioned botanists to acquiesce in his system, although number is one of the most variable of all characters; but this acquiescence has perhaps prevented them from attempting to detect the natural method of plants; and thus the very man to whom botany is under the highest obligations, may be said in one respect, to have contributed more than any other to hinder its arriving at perfection.

Hudson, in his *Flora Anglica*, Lond. 8vo, 1762, adapted Ray's Synopsis to the system of Linnæus, adding, however, several new species. To the synonyms and places of Ray, Hudson made only a few additions; the time of flowering was the principal improvement. On the other hand, the remarkable structures, and the uses of plants, which had been noticed by Ray, were omitted by Hudson. A second edition of this Flora was published in 1778, in which numerous alterations were made in the species, particularly in the grasses. For instance, in the first edition of his Flora, Hudson not only kept all the Linnæan species of *Agrostis* and *Bromus* distinct, but even added several new ones, viz. *Agrostis palustris*

palustris and *sylvatica*, *Bromus erectus* and *ramosus*; not to mention the additions in the other genera. In the second edition, as if he meant to compensate in some degree for his former multiplication of the species, he joined together not only the species he had introduced, but also several of the Linnean ones, under the comprehensive trivial name of *polymorphus*. Thus, *Agrostis polymorpha* contains not only his own new species, *palustris* and *sylvatica*, but also the Linnean species, *pumila*, *capillaris*, *stolonifera*, and *alba*. In like manner, *Bromus polymorphus* contains the *mollis* and *secalinus* of Linnæus.

The botanical arrangement of British plants by Withering, was, in the first edition of 1776, little more than a mere translation of Hudson; but, in the third edition of 1796, it was greatly improved.

The above are the most noted general Floræ. Symons has lately published his *Synopsis plantarum in insulis Britannicis indigenarum*, 8vo, Lond. 1798; in which, however, the three last orders of the class *Cryptogamia* are omitted. In the following year, Hull gave to the world his *British Flora*, Manchester, 8vo; a small but excellent manual for the practical botanist in his excursions. Of more circumscribed Floræ we have also several of note. Lightfoot, in 1777, published his *Flora Scotica*; and, in 1785, Relhan, treading the steps of Ray, produced the *Flora Cantabrigensis*, to which, at different periods, three supplements were afterwards added by himself. It was not, however, until a still later period, namely 1794, that the students of the sister university had equal facility in their botanical pursuits, by means of Sibthorp's *Flora Oxoniensis*.

Other authors, instead of confining their attention to particular places, have rather chosen to take peculiar genera of British plants under their consideration. Of these we need only mention Goodenough, whose genus *Carex*, is published in the Transactions of the Linnean Society; and Sole, whose *Menthæ Britannicæ* was published in 1798. These monographiæ display great accuracy of research, and show, in a very striking manner, the advantage to be derived from this mode of contributing assistance to the science.

Notwithstanding the pains that have been taken in the investigation of British plants, much remained to be done, in respect to the more exact determination of the species. For this task, no person could be better qualified than Dr. Smith, since, in addition to his skill in botany, he is in possession of the original *herbarium* of Linnæus, and hence could readily satisfy himself respecting the true application of many of the Linnean names. This power of referring to the identical plants designated by Linnæus,

was of the greatest utility, as his names have frequently been erroneously applied. Independent of these errors, a copious source of perpetual alteration of the species, and consequent change of name, has arisen from the progressive improvement of the science.

In order to exhibit a clear view of the principal improvements, which the botanical experience and accurate investigation of Dr. Smith has enabled him to make on the former publications on this subject, we shall mention them under distinct heads, beginning with the alterations and additions made in the genera. In the course of this review, we shall principally advert to the Flora Anglica of Hudson, as, although the publications of Withering and Hull are later in point of time, we consider the former to be the most proper object of comparison. It is necessary, however, to premise a few words respecting the general plan and execution of the work.

The plan upon which the learned author has proceeded, is, in itself, more complete than that of any other British Flora, and is formed on the best models of the Linnean school. To each class is prefixed an account of its characters, those of its several orders, and a synopsis of the genera, all of which had been omitted by Hudson. The essential characters of each genus are given, and amended differences of the several species, their trivial names being placed in the margin. To these succeed the synonyms of other authors, in which we have to notice the improvement of quoting the trivial names, where any have been given, rather than the specific differences: the English names follow.* The soil in which the plant is usually found, the particular places where it has been observed in the British isles, and the authority on which this information rests, succeed; the two last articles being, with great propriety, expressed in English. The account of each species concludes with the duration, time of

* The general excellency of this work is such, that we felt ourselves little disposed to find faults in it. We cannot, however, help observing, that we could have wished a distinction had been made between the usual English names by which the plants are known in their places of growth, and those new coined names which are little more than literal translations of the Latin ones, proposed for adoption, but not actually in use.

Hudson, by the advice of Stillingfleet, introduced, in our opinion very injudiciously, these anglicised botanic names. The frequent changes which take place in the genera, renders this kind of language too fluctuating for common use; and the Latin names are fully sufficient for mere botanical purposes.

of flowering, and a complete description even of the common plants. To this is sometimes added a few observations of importance.

The two first volumes, reaching as far as the end of the class *Syngenesia*, appeared in 1800: the publication was then interrupted, and the third was not published till 1804. This reaches to the end of the order *Cryptogamia Musci*, and we wait with impatience for the three remaining orders, which will no doubt furnish abundant matter for another volume; as the class *Cryptogamia* has, since the time of Ray and Hudson, been so increased by the labours of Hedwig, Bernhardi, Persoon, Dickson, and others, that, in the recent publication of Hull, it occupies nearly one half of his Flora.

The genera which have been added to those in Hudson are very numerous. Thus, in the class *Triandria*, we have not only *Sesteria*, adopted from Scopoli by Withering, of which the only species was the *Cynosurus cærelus* of Hudson, but also *Knappia*, the *Agrostis minima* of Hudson; and the *Cerastium umbellatum* is removed from *Decandria*, and restored to its original situation, as a species of *Holosteum*. In *Tetrandria*, *Exacum*, (the *Gentiana filiformis* of Linnæus and Hudson) and *Epimedium* are introduced; also *Radiola*, separated from *Sinum*. In *Pentandria*, besides *Tamarix* and *Corrigiola*, we have *Meum*, containing only one species, *M. Athamanticum*, the *Athamanta meum* of Linnæus and Hudson. In *Hexandria*, we find *Leucojum* and *Tulipa*, already noticed by Withering and others. In *Polyandria*, the genus *Chelidonium* is separated, as by Jussieu and Gærtner, into *Chelidonium* and *Glaucium*: to the species of the latter Dr. Smith has affixed the ancient trivial names, considering them preferable to those given by Linnæus. In *Didynamia*, *Linnæa* is introduced, as in Withering and Hull, *L. borealis*, having been found in Scotland by Professor Beattie. In *Tetradynamia*, Dr. Smith has added *Coronopus*, from Gærtner; and, in *Monadelphia*, he has followed Le Heritier, in separating the genus *Geranium* into two, viz. *Erodium* and *Geranium*. In like manner, he has in *Syngenesia*, taken *Pyrethrum* out of the *Matricaria* of Hudson, in which he follows Gærtner and Haller. In *Gynandria*, *Malaxis* is added as in Withering and Hull from Swartz. In *Monoecia*, the *Eriocaulon* of Linnæus, which name had by Hudson been altered to *Nasmythia*, is restored. In the two orders of the class *Cryptogamia*, contained in the present publication, several new genera have been introduced. In *Filices*, we have *Aspidium* and *Cyathea*, taken from *Polypodium*; *Scolopendrium* taken out of *Asplenium*; *Blechnum*, of which the only species, *B. boreale*, was formerly called *Osmunda Spicant*; and *Hymenophyllum*, made up of the *Trichomanes tunbrigense* and

 pyxidiferum,

pyxidiferum, united into one species by the name of *H. tunbrigense*. In the *Musci*, the alterations are still more numerous, as not only the *Buxbaumia* of Linnæus, Withering, and others (*Phascum montanum* of Hudson) is introduced, but also the new genera, *Gymnostomum*, *Andræa*, *Tetraphis*, *Encalypta*, *Grimmia*, *Dicranum*, *Trichostomum*, *Tortula*, *Orthotrichum*, *Pterogonium*, *Neckera*, *Funaria*, and *Bartramia*. These genera, most of which are taken from Hedwig and Swartz, are principally formed out of the old genera, *Bryum*, *Hypnum*, and *Mnium*.

The attention which has of late been paid to botany, has introduced numerous improvements in the arrangement, or in the enunciation of the characters of the ancient genera. Of those improvements, the learned author has availed himself; and we shall now notice the removals which have taken place among the genera. *Chara*, formerly placed the *Cryptogamia Algæ*, was removed to *Monandria Monogynia* by Withering and Relhan: Dr. Smith follows their example. *Zostera* is also removed, from *Gynandria Polyandria*, to the above class and order. *Callitriche*, in consequence of the sexes being sometimes in separate flowers on the same plant, was removed by Hudson from *Monandria Digynia* to *Polygamia Monoecia*; but is now brought back again to its former situation, in consequence of a general principle, to which Dr. Smith has adhered, namely, to take out of the class *Polygamia* such plants as differ only in their sexual organs, and place them in the classes to which their hermaphrodite flowers belong. This principle is certainly a very good one, as it tends to prevent an useless dislocation of analogous genera. Indeed we may observe, that the whole class might be broken up, and its genera removed to the several classes of hermaphrodite flowers; we confess, however, that considerable difficulty would occur respecting the place of *Atriplex* and *Mimosa*. The latter genus is unknown in the British Islands; consequently the class, as it now stands in Dr. Smith's Flora Britannica, contains only *Atriplex*. All the other genera are removed, *Holcus* to *Triandria*, *Digynia*, *Ægilops* (now called *Rottbollia*) to the same class and order: *Valantia* is included in the genus *Galium*, and affords a remarkable instance of the improvement these alterations have produced. *Parietaria* is removed to *Tetrandria Monogynia*; *Acer* to *Octandria Monogynia*; *Fraxinus* to *Diandria Monogynia*; and *Ilex*, as in Withering and Hull, to *Tetrandria Tetragynia*. Professor Thunberg was the first, we believe, who proposed to remove the *Syngenesia Monogamia* to *Pentandria*; a step in which he is followed by Dr. Smith. As those plants, from the simple structure of their flowers, assorted but ill with the compound flowers of the remaining plants of the class, we cannot but consider

sider their removal as an improvement in the arrangement which was loudly called for. *Drosera* was, by Linnæus, classed in *Pentandria Pentagynia;* but it was removed by Hudson to the next order *Hexagynia*, because the British species never have five pistils; Dr. Smith follows him in this removal. We think, however, that the most general number of the whole genus should characterize it, although such number might not be found in the British species. *Arum*, a genus which has constantly puzzled botanists to arrange and describe with propriety, is now placed in *Monoecia Polyandria.* On this change, Dr. Smith observes,

'Flores nequaquam gynandri sunt. Locum in hâc classe sibi vindicat organis masculinis, respectu fœmineorum, supernè aut internè positis, ut in plantis monoicis floribusque compositis universis ferè conspiciendum est, nec externè aut infernè, ut in omni flore simplici.'

This reason appears sufficiently strong to justify the genus being taken out of the class *Gynandria*, where it has so long stood as a plant with simple flowers. At the same time we must remark, that if we look upon the flower as compound, then each single anther will constitute a male floscule, and the genus should be placed in the first order of this class, Monoecia Monandria, as was indeed done by Schreber and Berkenhout. *Ruscus* and *Bryonia*, which constituted the order *Dioecia Syngenesia*, are both removed: the first to the order *Dioecia Triandria:* the other on the authority of Miller, who says of this plant 'adultior sæpe monoica,' to *Monoecia Pentandria.* The genus *Lycopodium* is removed from *Cryptogamia Musci* to the *Filices.* In addition to these changes, of which every botanist must see the propriety, Dr. Smith is doubtful whether *Pilularia* ought not to be removed from *Cryptogamia, Filices* to *Monoecia Polyandria;* and he also observes, that *Isoetes* would probably be arranged with more propriety in *Monoecia Monandria*, than among the *Filices.*

The author has bestowed equal pains in the determination of the species; and we meet with such numerous emendations of Hudson's Flora, and so many additional species, as evince the rapid improvement of the science, and bear testimony to the author's diligence and accuracy. To follow him through all these alterations would be a tedious task; but we think it right to notice a few of the more remarkable ones; previously remarking, that the author has usually contented himself with making the necessary alterations in the specific differences, synonyms and descriptions; leaving the reader to discover the nature or cause of the alteration; though we think it would have been better to have mentioned in few words, the reasons upon which he has proceeded.

Among the new species, we particularly notice the *Crocus nudiflorus*,

diflorus, the *Scirpus multicaulis*, and the *Eriophorum polystachion* of Linnæus. The latter is not the plant designated by this name in the works of Hudson, Relhan, Sibthorp, and Curtis; that being now called, after the example of Dickson, Withering, and others, *E. angustifolium*. An entire new species of *Poa* is described by the author.

Hudson, in attempting to follow Linnæus, had given the name of *Lolium temulentum* to a wrong plant, viz. the *L. arvense* of Withering and Smith. This error is now corrected, and both the *Lolium arvense* and the true *Lolium temulentum* of Linnæus are enumerated as British plants. *Galium Witheringii*, discovered by Withering, was erroneously conceived by him to be the *Galium montanum* of Linnæus, as Hudson and Relhan had before mistaken *G. saxatile* for it. *Anchusa officinalis* has, it appears, been found in Northumberland. *Campanula rapunculoides* has also been found both in Scotland and in Oxfordshire. *Lonicera Caprifolium* is also conceived by the author to be an indigenous plant. In *Ribes*, four new species have been added to those in Hudson, namely, *R. spicatum*, *Petræum*, *Grossularia*, and *Uva crispa*. Respecting the two last, Dr. Smith very justly observes, that the marks by which they are distinguished are very uncertain specific distinctions, and, of course, that they may perhaps be more properly considered only as varieties of the same species. In *Gentiana*, two species are added to those in Hudson, viz. *G. verna*, and *nivalis*. Two species of *Bunium* are now enumerated, namely, *B. Bulbocastanum* and *flexuosum*. It is to the latter species that the *B. Bulbocastanum* of Hudson, Relhan, and Curtis, is referred. The *Narcissus poeticus* of Hudson is now called *N. biflorus*, and is described as a species distinct from the true *Narcissus poeticus* of Linnæus, which is also a British plant. Symons and Hull have erroneously given the name of *Juncus Jacquinii* of Linnæus to a new species, called by Dr. Smith *J. castaneus;* and he also suspects the *Epilobium roseum* of Symons to be only a variety of *E. tetragonum*. In *Saxifraga*, several new species not contained in Hudson, are introduced, as *S. umbrosa*, *cernua*, *rivularis*, *cæspitosa* (a different species from the S. cæspitosa of Hudson,) *moschata* (which is perhaps Hudson's S. cæspitosa,) and *palmata:* of these, *S. rivularis* and *cæspitosa* are newly discovered in our islands. *Spergula pentandria* is admitted on the authority of Dillenius, as Dr. Smith has not yet been able to discover it himself; the *Spergula saginoides* is also added, having been found on the Scotish mountains by Mr. Mackay, to whom we are also indebted for the *Euphorbia esula* now introduced. The author has also been induced by his own observations and those of Mr. Crowe, to form a new species, under the name of *Rubus corylifolius*, of the plant that

that Withering had described as a variety of *R. fruticosus*, and which appears to have been already noticed as a distinct species by Dillenius, in his edition of Ray's Synopsis: to this genus is also added another species, the *Rubus arcticus* of Linnæus. The *Ranunculus parvulus* is also admitted, having been found near Bristol. In *Mentha*, Dr. Smith has made good use of Mr. Sole's observations on this genus, without, however, constantly following him; several varieties, in many of the species, are accurately distinguished, and a few new species are added to those enumerated by Hudson, as *M. odorata, acutifolia, gentilis*, also *M. rubra*; by which last is not meant the plant mentioned under that name by Hudson (now considered as a variety of *M. gracilis*) nor that so called by Sole (now named *M. gentilis*,) nor even that of Miller (now *M. odorata*,) but the *M. verticillata* of Ray, or *M. sativa* of Sole.

Here we cannot help remarking the great impropriety of shifting the trivial names from one species to another. Whenever any alteration takes place, a new trivial name, not hitherto applied to any plant of that genus, ought to be proposed; and, if a species is devided into two, each should undoubtedly receive a new name. For want of attending to this very necessary precaution, we are frequently reduced to the necessity of quoting, not only the author, but even the identical work, and, in some cases, the edition; or, to avoid this, to give the specific difference; either of which is a manifest departure from the brevity which it was the object of Linnæus to introduce by the employment of trivial names. The impropriety is still greater, when, as is sometimes the case, the names are counterchanged, of which we have an instance in this genus, *Mentha*. The *M. sylvestris* ∂ of Smith is the *M. rotundifolia* of Sole; and, *vice versa*, the *M. sylvestris* of Sole is the *M. rotundifolia* of Smith.

The author has not made less use of Mr. Sutton's observations on the genus *Orobanche:* to the two species mentioned by Hudson, three have been added, as in Hull, viz. *elatior, minor*, and *cærulea*. The *Thlaspi hirtum* of this last botanist, is considered only as a variety of the *T. campestre;* the true *T. hirtum* of Linnæus is added, as it appears, from comparing the characters given by Ray, of the *T. vaccariæ incano folio, perenne*, with the specimens in the Linnæan herbarium, to be really the same species. *Erysimum præcox* is inserted on the single authority of Petiver, certainly none of the strongest. In *Fumaria*, we find three additional species *solida* (*F. intermedia* of Hull,) *lutea* (*F. capnoides* of Hull,) and *parviflora;* the last being the F. tenuifolia of Symons; but the synonyms which he has given us of this species, Dr. Smith judges to be entirely erroneous. In *Vi-*

cia

cia, we meet with another instance of Hudson and Withering having applied the Linnæan names to a wrong plant; the name of *V. hybrida*, a very rare plant in the British isles, having been given to a new species, now distinguished by the name of *V. lævigata*. *Lotus diffusus* of Solander, is introduced for the first time into our Flora; and the *Graphalium sylvaticum* of Hudson is here more properly called *G. rectum*; while the true *G. sylvaticum* of Linnæus is added as a new species. Dr. Smith is of opinion that *Tussilago Petasites* and *T. hybrida* are of the same species, which is dioecious, the former being the male, and the latter the female. *Senecio squalidus*, although common on every wall about Oxford, has hitherto escaped our botanists. *Centaurea Isnardi* has been found in Jersey. We now arrive at *Carex*, in which genus, in consequence of Dr. Goodenough's labours, great additions and alterations have been made. In the first edition of Hudson, only twenty-six species of it were enumerated; in Hull, they were increased to forty-six; but, in the present work, the genus contains fifty-two species: four of these species are not to be found in any of our Floræ, viz. *Davalliana, tomentosa, micheliana, lævigata.* In the genus *Salix*, a still greater addition of species has been made. From eighteen species as it stood in the first edition of Hudson, or twenty-two, as in the late publication of Hull, it has been augmented to forty-five. Of these there are eight which are entirely new.

The additional species in the *Cryptogamia Musci*, several of which are now first described, are so numerous, that it would take up too much space to enumerate them. Suffice it to say, that this order is now nearly trebled; in the first edition of Hudson, it contained only 112 species; but, in the present work, the number is increased to 320, although, as we have already noticed, *Lycopodium* is removed to the *Cryptogamia Filices*.

Having thus noticed the principal species of the more perfect plants that have been introduced, it remains to say a few words concerning the species that have been removed from one genus to another, which are scarcely less numerous. Being, however, for the most part, of less consequence, we shall pass rapidly over them; and, at the same time, mention an instance or two of changes that have taken place within the same genus. The *Alopecurus aristatus* of Hudson is now *Phleum crinitum*. The *Avena elatior* of Linnæus is changed into *Holcus avenaceus*. *Lolium bromoides* of Hudson, is now *Festuca uniglumis;* to the same genus is referred the *Bromus giganteus* of Linnæus, while, on the other hand, the *Festuca sylvatica* and *pinnata* of most botanical authors are referred to *Bromus*, the trivial names being retained. *Arundo colorata* of Solander and Smith, was the *Phalaris arundinacea* of Linnæus.

Linnæus. By some gross mistake, Hudson and Relhan had so confounded the *Arundo calamagrostis* and *epigejos*, that they applied the name of the one plant to the other. Withering, who formed a genus named *Calamagrostis*, which included both these species, also assigned the trivial name *epigejos* to the *Arundo calamagrostis* of Linnæus; and this mistake is not corrected by Hull. *Daucus Carota* had by Hudson, in his second edition, been removed to *Caucalis:* in this removal, however, he was not followed by any other botanist; and Dr. Smith has, with much propriety, replaced it in its original situation. The *Sium verticillatum* of Smith, was considered by Linnæus and Hudson as a *Sison;* but the author observes,

'Ex umbellis multiradiatis, involucro et involucello polyphyllo, petalisque cordatis, Sium potius quam Sison mihi videtur.'

The *Hyacinthus non scriptus* of Linnæus, Hudson, and most other botanists, is now called *Scillanutans;* the genus is of course omitted; and the author attempts to justify the removal, by the following remarks.

'Dubii generis herba gaudet floribus campanulatis, tametsi non monopetalis, ut in hyacintho; structurâ verò partium, figurâ staminum, totoque habitu Scilla est; nec obstat corolla, in hâc specie ut in S. Peruvianâ Linn. & S. campanulatâ Hort. Kew. persistens.'

The *Cucubalus viscosus* of Hudson, now referred to *Silene paradoxa* has, as Dr. Smith observes, occasioned many errors.

'Millures, pro Lychnide majore noctiflorâ Dubrensi perenni Raianâ in horto Chelseano coluit, et cum Linnæo communicavit, Silenem paradoxam; ut ex Herb. Linn. et Mus. Brit. (*H. Sicc. n.* 294. 30.) patet. At in herbariis Buddlei et Petiveri, in eodem museo (*H. Sicc. n.* 124. 5. *et n.* 152. 86.) repositis, specimina Silenis cujusdam, prorsùs diversæ et mihi ignotæ, in ipso agro Dubrensi, ut videtur, lecta, nuper vidi. Hæc verò, malè conservata, ad novam generis tam difficilis speciem describendam, haud optimè valent; et in eorum loco natali Silene nutans tantùm hodie observatur. Quid igitur faciam? Confusio pristina manebit donec planta Raiana botanicis de novo sese offerat.'

The *Cucubalus Behen* and *C. Otites* of Linnæus and Hudson, are also referred to the genus *Silene*. *Cratægus torminalis* and *Aria*, *Sorbus domestica*, *aucuparia* and *hybrida*, (the last being however a very dubious British plant,) are all considered as belonging to *Pyrus*. And hence, as *Cratægus Oxyacantha* is referred to *Mespilus*, both these genera, viz. *Sorbus* and *Cratægus*, are entirely omitted. In like manner, *Melissa Calamintha* and *M. Nepeta* are removed by Dr. Smith to *Thymus;* and the genus *Melissa* is of course omitted. So also, *Myagrum Sativum*, *Cochlearia Coronopus*, and *Lepidium didymum* of Linnæus are referred to other genera; the first to *Alysson*, (*Moenchia* of Gmelin, Withering and Hull;) the other two to *Coronopus: Myagrum* consequently is no longer

longer enumerated as a British genus of plants. The *Brassica muralis* and *Monensis* of Hudson, are returned to the genus *Sisymbrium*; as *Cardamine petreæ* is to *Arabis*. In the same manner, the *Hedypnois hieracoides*, *tectorum*, and *biennis* of Hudson, are returned to the Linnæan genera, from which that botanist had removed them, namely, *Picris* and *Crepis*. In the class *Cryptogamia*, the removals are still more numerous.

We have thus related the principal improvements which Dr. Smith has introduced into the British Flora. A comparison of this work with similar ones, will show the most careless observer the great superiority it possesses over them. The species are more accurately determined, and, in many cases, referred to more proper genera. The synonyms appear to have been examined with great care; and Dr. Smith professes to have quoted none, except such as he had himself ascertained to be right.* If to these we add the complete description given of every species, the botanist will easily conceive the highly finished state in which the work is given to the public. We have, therefore, no doubt, but that Dr. Smith will receive from all quarters, the praise to which he is so justly entitled.

ART. VIII. *Memoires de l'Academie des Sciences de Turin.* Année 1792 à 1800. Tom. VI. 2 Parties. pp. 600. 4to. Turin, 1801–2. De l'Imprimerie Nationale.

THIS volume contains many interesting and original productions of the various learned Italians who belong to the Turin Academy. The papers which struck us as peculiarly worthy of attention, belong to the chemical, mathematical, and electrical departments of science. In each of these classes, we find much to admire; and after shortly noticing the subjects of these tracts, we shall proceed to lay before our readers a more detailed account of their contents, beginning with the chymical papers.

I. The chymical papers which principally deserve attention, are three—'On the phosphoric light of certain stones rubbed with a feather or a brass pin'—'Examination of hydrogenous gas after it had been kept many years,' both by Count Morozzo; and a tract upon

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* In one instance, however, we have found an erroneous reference, viz. in p. 280, *Kali spinosum cochleatum*, Raii Syn. 107; this ought to be 159. In *Prunus insititia*, the synonyms of Hudson are omitted; in the first edition, it bore the same name; but in the second, it was joined with *P. domestica*, under the name of *P. communis*.

upon the combustion of sulphur and the metals, by the Chevaliers St. Real and Maistre.

II. The mathematical papers are of great ingenuity, and their subjects very important—'On the resolution of numerical equations of all degrees'—'On a problem of difficult analysis,' (viz.. to describe the greatest possible ellipsoid in a papezioid or irregular solid,) both by the Abbé Caluso—'On the resolution of equations of all orders,' by the Abbé Franchini—'On the division of circular arcs,' by M. Michelotti— and 'An essay on the problem, An integral number being given for a side of a right-angled triangle, to find all the pairs of integral numbers which form the other two sides,' by the Pere Saorgio.

III. The electrical papers are likewise valuable—'On the law of Volta,' by Dr. Canali—'Solution of some questions in electricity,' by the Abbé Eandi—'On the utility of conductors,' by Abbé Vasalli—'On the muscular attractions produced by animal electricity,' by Messrs. Julii and Rossii.

1. We begin with the first of these divisions, reserving the other two for a future opportunity.

Of the Phosphoric Light which some stones give when rubbed with a Feather or a Brass Pin, and particularly of the Phosphorescence of the Tremolite and the Cyanite, with some Observations on the Positive and Negative Electricity of different Stones. By the Count de Morozzo.

After reciting the facts formerly observed on this subject, with which our readers are sufficiently acquainted, Count Morozzo proceeds to detail some circumstances which presented themselves in the course of his experiments upon these curious appearances. These experiments were chiefly made with a very delicate electrometer, invented and constructed by the Abbé Vasalli, described in the last volume of the Turin Memoires, and preferred by Count Morozzo to every other.

With this instrument, good tremolite crystals gave, when rubbed, signs of considerable postitive electricity, as did also the Dolomie; but Cyanite Blende and Cadmie, though very luminous, gave no marks whatever of electrization. In this manner, our author was driven from his first opinion, that the phosporescence of stones is caused by electricity; and he continued his trials, in order to discover the true cause. He found that marbles, and all calcareous spars, when rendered luminous, gave proofs of negative electricity; that the barytic and gypseous and selenitic spars gave marks of positive electricity, as also the Bologna stone; and that the fluoric spars gave marks of neither the one

one nor the other kind. He infers that the spars containing carbonic acid contain negative electricity; while those which consist in part of sulphuric acid, contain positive electricity. He confirmed this idea, by examining metallic ores, and finding positive electricity in proportion as the acid which neutralized the bases was sulphuric; and negative electricity in proportion as that acid was carbonic. As a farther test of his doctrine, he calcined barytic spar and gypsum: the former, being deprived of its acid, gave negative instead of positive electricity; the latter, when deprived of its acid, gave neither. Our author adds, that these experiments are extremely delicate, and often fail, or give equivocal or contradictory results. This he ascribes, partly to the difficulty of finding substances perfectly homogeneous, partly to variations in the atmosphere, temperature, and manner of manipulating. But, in general, he thinks his experiments sufficiently consistent to authorize the inference, that there subsists some connexion between carbonic acid and negative electricity; between sulphuric acid and positive electricity. He concludes by noticing the experiments of 'le celebre Anglois M. John-read,' (meaning Mr. John Read,) with his doubler of electricity, and pointing out their coincidence with his own. This is remarkable in three points: first, that gentleman found, that atmospherical air, in a state of purity, is always positive; secondly, that when corrupted by vegetable or animal putrefaction, it is negative; and, lastly, that respiration in a close chamber renders the electricity of its atmosphere negative, when before it was positive. We extract the concluding sentence of this neat and interesting little tract, as a specimen of modesty not too common among philosophers, even among those of France and Italy.

'Ce n'est qu'un aperçu que je presente à l'Academie. Ces experiences ont besoin d'être beaucoup diversifiées, et recevront par des mains plus habiles le degré de perfection que l'on peut desirer.' Part I. p. 149.

The light given out by stones, &c. may thus be thought by many to be an electrical phenomenon; and it may be supposed that this paper belongs rather to the last of the classes into which we have divided these Memoirs. But, besides that the experiments of Count Morozzo do not by any means warrant such an inference, we have thought it proper to place his speculations in the present article, because they refer directly, in our opinion, to a subject which presents important obstacles to the new chemical system; and, in this particular, resemble both the other memoirs of which this class is composed.

Phosphorescence, in general, is by no means ranked among the processes of combustion by the French system of chymistry. The light,

light, unaccompanied by any sensible heat, which certain stones give out after exposure to the sun, or any very luminous body, and the inferior degree of radiation which is perceived in almost all bodies, whether inflammable or not, when placed in broad daylight, and suddenly transferred into a dark place, (see Beccaria's experiments;) these phenomena are commonly referred to the class of optical appearances, and are not supposed to have any connexion with inflammation. It deserves, however, to be remarked, that though the application of heat in all these processes greatly assists the developement of light, still they resemble each other, and differ from ordinary cases of irradiation in these two material particulars, that they are carried on without injury to the body, and fail if the body has not immediately before been exposed to the light.

But there is a class of phenomena which resemble more nearly the common appearances of combustion, and which nevertheless ought not, according to the French theory, to be ranked among those processes. We allude to the permanent phosphorescense of certain substances in all circumstances, yet unaccompanied by any thing like oxygenation. Of this description, we shall at present give only one instance, but that a very remarkable one, and one which has not hitherto been examined with the attention it deserves. We allude to the insects commonly known by the name of fire-flies, and abounding in the south of Europe. They resemble, in their size and external appearance, some flies known in the north: their shape is oblong; their wings are covered with an outward shell, like insects of the beetle tribe; the head is red, with a black spot in the centre. In the dark, when they perch or creep, nothing is observable; but as often as they rise to fly, a bright light is perceived. This is not constant during their flight, but recurs every other instant, as if it were disclosed by the opening of their wings at each successive expansion. When laid upon their back, they give out this light constantly, and have much difficulty in turning themselves. The light, when thus examined, is a clear, phosphorescent or lambent flame, of a green or light blue, inclining to yellow. It is very considerable even in one fly; and the light of three or four is sufficient to render small objects around quite visible. It is apparent in twilight. When these insects are examined by daylight, their bellies are perceived to be distinctly divided about the middle, by a line passing across the body. The under part is of a bright yellow, resembling in colour, smoothness, and in every particular, a bit of fine clean straw; the rest of the belly is quite black; the yellow part alone is luminous. When the fly is dead, the luminous appearance still continues for two or three days. If the yellow part be cut off, it

shines

shines as brightly as before; and if rubbed between the fingers, a luminous greasy matter, like the bowels, oozes out, tinging the fingers, wherever it touches, with the same kind of lambent flame. This friction speedily terminates the phenomenon, apparently by exhausting the supply of luminous matter. Air is by no means necessary, or at all conducive to this process of phosphorescence: on the contrary, under water, or other liquids, the flies shine as much as in the air.

Here, then, we have an animal process, at first sight resembling the slow combustion of the blood in the lungs, rendered visible by the extrication of light. We find, however, that no ozygenation whatever attends it. In what manner, then, are we to draw the line between such phenomena? This is not a case which can be explained by saying that light is absorbed, and then given out; for if the animal is kept alive for months in a dark place, the luminous appearance continues; and if it die, that appearance survives but a short time. Something is evidently secreted, which burns or radiates with a lambent flame, and which does not owe this luminous quality to any previous contact with light. The flame is kept up without air exactly as well as with it. No oxygenation can therefore be suspected. But no perceptible heat is evolved. Neither is any perceptible heat, or any perceptible light evolved in the first stages of combustion and oxygenation; yet the new theory never fails to suppose such an evolution of both; only adding, that it is so slow as to escape the senses. Here, much light is given out; consequently, the process resembles combustion much more than many cases in which it is admitted to take place. In fact it resembles combustion exactly as much as the first stages of common phosphoric inflammation. How such phenomena are to be severally arranged and denominated in the theory of oxygenation, we are at a loss to discover. We shall return to the same train of speculation, after analyzing the following papers.

Examination of Hydrogen Gas, which had been kept twelve years in a Bottle. By the same Author.

Count Morozzo having been among the first to verify the celebrated discovery of our countryman Mr. Cavendish, happened to leave a pint bottle of hydrogen gas well sealed, with three inches of water under it, in his laboratory, from the month of February 1786, and to find it there in July 1797. He immediately tried some simple experiments, to examine the changes which it had undergone.

On opening the bottle under water, an absorption of two inches took place. It burned exactly like common hydrogen gas. A small animal introduced into the bottle was seized with convulsions,

sions, then recovered, and lived 40 minutes; a second lived 30 minutes; and flame was extinguished equally after the death of the first and of the second, if we rightly comprehend the author, (p. 151, Part I.) The quantity of the gas did not permit the Count to make any more experiments; but he proceeds to draw conclusions from those above related. He infers, that the long contact of water ameliorates the gas, probably by developement of oxygen; for the *second* animal lived a considerable time, which could not have happened, had the air been common atmospheric air, deprived of its oxygen by the breathing of the first animal. He next concludes, that the air was ameliorated only as to its power of supporting life, not as to its power of supporting flame.

Our author next refers to a former paper, and denies the possibility of forming a fluid exactly like the atmosphere by artificial means. He shows that there is a remarkable difference between the effects of respiration on the air, formed by mixing azotic and oxygenous gas, and the air of the atmosphere; that in the former several animals live, one after another has died; and that a taper burns in this factitious air, after animals have died in it; none of which circumstances take place in the natural atmosphere. There, a second animal dies quickly after a first has been killed by breathing it, and a taper is instantly extinguished. There must be something, then, says Count Morozzo, in the factitious oxygen, which the oxygen of nature does not possess. He conjectures that this may be the matter of light and heat, in the phlogistical spirit of the Italian philosophers; and refers to the Memoire which we are next to analyze in support of this opinion.

On this tract, we have to remark, first, that it is very unphilosophical in Count Morozzo to speak of *time* as producing changes on the subject of his experiments. He prefaces his paper by saying, that it is to contain an example, not of the changes effected by common substances on the gases, but 'of a change caused by *time*.' He should recollect, that time, though a poetical, is by no means known as a chymical agent. Secondly, The change produced on the hydrogen, we are inclined to think rather a deception than an incontestable reality. The author had only an opportunity of making one experiment; and this may easily have been affected by accidental circumstances. For instance, the animal may have had a great quantity of air in its lungs, and a still larger quantity may have been introduced along with it into the receiver. The whole quantity was originally one pint. From this, deduct the space occupied by two inches of water, and the quantity used for burning. Then consider how little remained, and attend to what was done with it. First, one animal was introduced. We are not told if its body was drawn out after it died,

died. Probably it was; and, if so, a considerable bulk of pure air may have entered. Lastly, another was introduced, and, of course, some air accompanied it. Will not this explain the fact of its living 30 minutes in the receiver?

Observations on some Experiments, in which Sulphur or the Metals appear to burn, though in vessels deprived of Air, and in which Sulphuric Acid is formed without Inflammation of the Sulphur. By the Chevaliers De St. Real and Maistre.

These experiments and reflections owed their origin to the experiments of the Dutch chymists, in which sulphur was said to have burnt with metals, both in phials closed up, and in tubes filled with the airs generally believed to be incapable of supporting flame, as well as in tubes exhausted by an air pump. Other chymists had conjectured (after trying the same experiments with success) that the decomposition of water is concerned in the phenomenon; for they remarked that those metals are incapable of producing the effect, which are not acted upon easily by water, as bismuth, antimony, cobalt, and mercury. The authors of the paper now before us wished to examine this singular subject, by repeating and varying the experiments of the Dutch philosophers. The results of their trials and reasonings deserve some attention.

Their mode of operating was twofold. They first performed the combustions, together with some other experiments, in a matrass, with a valve opening outwards, and in which sulphur could not burn alone. They next repeated the same experiments in the receiver of a convenient air-pump. In all these experiments, the same consistent results were observed. Without metals, no combustion, that is, no combination accompanied by light and heat, took place. A mixture of sulphur and metals always became red-hot on the application of a gentle heat, and united into a hard, solid, and heavy mass. So far these experimenters had only observed the same facts which the Dutch chemists discovered; but we find two important additions to their discoveries. A light, subtle *flame* was seen to play on the surface of the glowing mixture at the time of its greatest heat and light. This is said to be a circumstance of difficult observation, and not always possible to be seen. It is described only in the account of the trials made with the matrass and valve, where the vacuum was necessarily imperfect, and is not distinctly referred to when the confirmation of the process is related in the experiments with the air-pump. It is only said in general, that the same events took place as before. Yet our authors observe, that they only saw the flame twice during their experiments, and do not particularize whether it appeared both times during their repeated trials with the imperfect

perfect vacuum, or once also during the process with the air-pump.

The other new circumstance remarked by our authors is, that oxydes, well purified, and carefully deprived of all metallic particles, when substituted for the metals, in these experiments, exhibit no combustion, but are suddenly decomposed in vacuo by a gentle heat, the sulphur flying off in sulphurous acid gas, and the metal remaining in part deoxygenated. Iron oxyde not affected by the magnet, was rendered attractable by a process of this sort, and had its colour changed. Copper oxyde rapidly acidified the sulphur, so as even to burst the receiver. The first test of sulphuric acid was muriate or barytes; but the gas being collected in water, and the liquor distilled, a pure sulphuric acid was easily obtained. To this fact our authors attach as much importance as to the discovery of the Dutch chymists. They then proceed to inquire, whence comes the light and heat, and even the flame, to these experiments with reguline metals; and why there is a formation of acid without flame, light, or heat, in the process with the oxydated metals. Disclaiming all prepossessions in favour of either the ancient or the modern chymical theories, they observe that the phenomena above related give plausibility to some of Stahl's doctrines, and are repugnant to a part, at least, of the antiphlogistic theory. If the mixture becomes red, say they, in the same manner as quartz exposed to a strong heat, why does a continuance or increase of the heat fail to continue or increase the ignition? The like answer is given to the supposition of the light being phosphoric, like that of fluor spar; and our authors think it fair to infer, that something is contained in the metals, or in the sulphur, or in both, which the new theory has made no allowance for.

Again, on the impossibility of producing combustion by oxydes mixed with sulphur, our authors ask why a flame should not here take place when acid is formed, and oxygen exists? They then lay down certain inferences from the whole, of which our readers have of course already anticipated the substance. They conclude that the metals and sulphur contain something which acids and oxydes have not; that in combustion this is given out; and that the metals regain it, by having their oxydes mixed with sulphur (which has it) and heated. These positions they surrender to criticisms, with repeated protestations of their freedom from all theoretical prejudices; and they conclude with two practical applications of their experiments; the one, that we may derive from thence an easy means of detecting metallic parts in sulphurous ores; the other, that we may obtain a cheap mode of forming

sulphuric acid by means of oxydes, the same oxyde serving seven times successively to acidify the sulphur.

It is at first sight obvious, that these learned academicians have greatly overrated the importance of their experiment upon the oxygenation of sulphur, by exposure to heat with metallic oxydes. That an acidification of the sulphur should take place in such circumstances, and a proportionate deoxydation of the metal, is not only nothing wonderful, but is of all facts the most ordinary—it is the common process of reduction. Our authors have omitted to note the degree of heat applied. Possibly this may have been unexpectedly small, and may have excited their surprise, the heat usually required in processes of reduction being considerable. For a thousand facts of the same kind, however, in which both carbonic, nitric, sulphuric, and other acids are formed by metallic oxydes, we refer to the whole body of the French experiments, and to the mass of facts collected by Dr. Priestley. This observation of the Italian chymists, therefore, is by no means, as they allege, equally important with that of the Dutch experimentalists.

But they have committed a still more unaccountable, and much less excusable error, in their remarks upon the absence of light and heat in this process, and in their very hasty inferences from hence against the consistency and justness of the new theory. It is, indeed, a strange thing, that two expert chymists, who have apparently studied the principles of that theory, and examined them with all the attention of scepticism and hostility, should so completely misapply them in a simple case. The doctrines of the French school, far from teaching us to expect combustion, that is, extrication of heat and light, in the experiment of these chymists, lead us to look for the very contrary. When sulphur is mixed with an oxyde, and heated, there is no *oxygenous gas* present at all. There is *oxygen*, indeed; and that oxygen uniting with the sulphur, acidifies it, whilst it quits the metal, which thus becomes in part reduced. But according to the French theory, combustion arises from the mixture of oxygenous gas with certain bodies which seize upon its base, *i. e.* oxygen, and precipitate its other component parts, *i. e.* the caloric or matter of light and heat. When the base only is united with the inflammable body, as in the experiment of our authors, the French theory considers combustion as impossible. It is the more remarkable that this mistake should have been committed, because an instance of inflammation in similar circumstances, viz. in the mixture of charcoal and sulphur with nitrates and oxymuriates, is always cited as an anomalous fact, nay, insisted upon as an insurmountable objection to the theory of oxygenation. Our authors having found

found an instance wherein the French system is perfectly well supported, unfortunately quote it as a proof of failure. They have truly mistaken the rule for the exception.

We are thus led to deny entirely, the main inference deduced by them from these experiments, that metals and sulphur contain something which oxydes and acids have not; and that the process of reduction restores this something to the oxydes and acids, depriving the reducing bodies of it at the same time. How the experiment of the Dutch chymists should have led the Italian academicians to look for an extrication of light and heat in their experiment we cannot conceive. '*If the union of sulphur and iron gives out light and heat, therefore the union of sulphur and oxydated iron must produce the same extrication.*' Such seems to have been their fundamental position. But, admitting that the position was a fair one, did they effect such a union? By no means. Instead of uniting sulphur with iron oxyde, they decompounded the oxyde, and united the sulphur with oxygen. They then rashly inferred, that the iron had lost something when formerly oxydated, and reasoned just as if they had united the oxyde with sulphur. It would have been a more legitimate argument to have concluded that the oxyde wanted something which was present in the iron, if either the combustion had been wanting when a union was effected between the sulphur and the oxyde, or the iron obtained from reducing the oxyde had failed to burn with sulphur.

In spite of this erroneous method of attack, however, the objections which may be stated against the new system, from the discovery of the Dutch chymists, remain in full force. That discovery exhibits an instance of light and heat precipitated by the union of two bodies, neither of which is understood to contain any oxygen, consequently ignition is not caused by oxydation alone; and luminous and calorific matter may be precipitated from other bodies as well as from oxygenous gas. And to this important position, a very valuable addition is made by the Italian philosophers, if we can at all trust the accuracy of that part of their experiments in which a flame was observed to accompany the combustion of the sulphur and iron. This seems to have struck them as very unaccountable; but it is wonderful that it did not still more forcibly arrest their attention. It is, if true, the most singular discovery that has been made since the promulgation of the antiphlogistic theory. The experiment of the Dutch chymists showed us a remarkable case of *ignition* without oxygenous gas; but this was not the first instance of the kind. The ignition of the earths and other substances, takes place independent of any oxygenation; and was perfectly well known before the Dutch experiment;

riment; nay, the degree of ignition formerly remarked in asbestos, and utterly unconnected with oxydation, was not exceeded by that of the sulphur and metals uniting. But a combination of ignition with evaporation, in other words, the ignition of a body in the gaseous form, without oxygenous gas, that is, a real flame produced in vacuo, or in airs unfit for supporting flame, was never seen, and hardly conceived to be possible, before these experiments of the Italian academicians. That such a phenomenon, however, might be expected as a modification of the Dutch experiment, always appeared to us extremely obvious. To effect this object, nothing more seemed necessary than the combination of the two bodies in the state of vapour; and as some metals are capable of being easily evaporated, this did not appear very difficult. We accordingly proposed, many years ago, to an experimental society in this city, the following mode of operation as likely to produce flame in vacuo; and we notice it here, that the success of the Italian philosophers may encourage others to execute this project. First, the possibility of uniting zinc with sulphur, which many chymists had denied, was proved by obvious experiments. This only required a moderate degree of heat and compression, and a sufficient granulation of the metal. The sole difficulty seemed to arise from the metal in former trials not having been properly granulated. Then it was proposed, that a balloon of strong glass (such as might be used in the experiments for the formation of water by the cumbustion of hydrogenous and oxygenous gases) should be provided and connected by a tube with an air pump, or, as occasion required, with a pneumatic apparatus; that it should have two iron retorts inserted, and exactly cemented into it, and placed so that their necks might face each other at the distance of half an inch. Then, one of these being filled with sulphur, and the other with granulated zinc, and the balloon being exhausted, or filled with carbonic acid gas, it was proposed to apply such a heat to the zinc retort as might drive it off in vapours. According to the common process of sublimation, as soon as the vapours ascended in sufficient quantity, a heat applied to the other retort would drive off the sulphur; and the two streams meeting, it was conjectured that a real flame would be the consequence of their union. We were far from suspecting that iron possessed sufficient volatility to adapt it for this process; but the memoir of the Italian academicians, if their account is at all justified by the accuracy of their experiments, shows that iron itself may be inflamed, or reduced to the state of intensely hot and luminous vapour by union with sulphur. The analogy of other experiments, coupled with theirs, suggests an explanation of this phenomenon, and some farther consequences,

ces, all alike repugnant to the modern theory of combustion. We shall now briefly notice them.

When sulphur and iron are gently heated in contact with each other, they unite with avidity, and fuse together into a solid, brittle, semimetallic mass, being a real sulphuret of iron, and demonstrating by the perfect polish of which it is susceptible, that the iron must have been in a state of complete fusion. Here, then, is a case of what has been obscurely and unphilosophically called *predisposing affinity*. The addition of sulphur causes one of the most infusible of the metals to melt by a very moderate application of heat. This heat cannot have come from the iron; for a solid body certainly contains less latent caloric, than the same body in a state of fusion. Nor can the heat have come from the sulphur; for the fusion of the iron must have *preceded* its union with that body, and must consequently have preceded the extrication of any heat contained in the sulphur. But let us pass over this incidental difficulty;—it is only a new instance of the total inadequacy of our present theory to explain a very large class of phenomena. The fact is, that the exhibition of sulphur increases in an immense proportion the fusibility of iron: and the form of experiment, as old as Macquer, who describes it both in his Elements and his Dictionary, renders this still more obvious than the process of the Dutch chymists; for if a bar of red-hot iron, not even softened by the fire, be rubbed with a stick of sulphur, it falls into instant and complete fusion.

It is equally well known, that iron, by a great degree of heat, like many other metals, may be made to burn in the air, with a flame; that is to say, the union of oxygen with iron, occasioned by heating it violently in oxygenous gas, occasions it to evaporate during the process; and the vapour, combining with the gas, burns. The French chymists call this an extrication of light and heat from the oxygenous gas; but the Italian chymists have found the same burning vapour, or true flame, to attend the union of sulphur and iron effected by a moderate degree of heat. It is clear, then, that the light and heat do not come exclusively, if at all, from the oxygenous gas; and the sulphur appears, in this process, to assist the evaporation of the iron, exactly in the same way as it aids the fusion of that metal in the process above alluded to. It is singular, that the ignition and inflammation of this metal should not even take place more easily in oxygenous gas than in sulphur. On the contrary, both those kinds of combustion are effected with much greater ease in sulphur, than in the fluid which the French chymistry denominates the sole fountain of light and heat, and the sole cause of combustion.

The same considerations of the readiness with which sulphur produces

produces the fusion and evaporation of iron might, perhaps, suggest an improvement, or, at least, a simplification of the process above described, for causing zinc to inflame without air. It is very likely, that the presence of sulphur may produce the same effect in this as in the other instance, and may, without any apparatus, other than an exhausted phial, cause zinc to unite with it in a state of ignited vapour, provided the mixture be pushed by a heat somewhat greater than is necessary to produce the ordinary union of the two bodies.

Nor are these the only instances in which appearances are directly at variance with the new, and, we must take leave to say, too rashly received system of chymistry. We have alluded to several in a former article, and to a new one in the first part of the present review. More may be found stated, with infinitely greater force, by Professor Robison, in his invaluable annotations to Dr. Black's Lectures: and we suspect, that a phenomenon of very ordinary observation, if duly examined, will be found to present an additional fact to the increasing body of exceptions; we mean, the light and heat given out by quicklime in the process of slaking. The presence of water is the only circumstance that prevents us from at once denominating this a case of flame without oxygenous gas. The removal of that circumstance, and a slight variation of the process will, in all likelihood, add a new and formidable objection to the antiphlogistic doctrines, as combined and dogmatically systematized in the Parisian schools. Against the daily augmenting force of this hostile body, we cannot expect the citadel long to hold out, without some alterations in its interior arrangement, which may new-model its works, develope new resources, and either disarm its adversaries by fair combat, or (what is more probable) appease them by a fair compromise. From one mode of attack, however, the antiphlogistians have nothing to dread; we mean, that which consists in seeking aid from the worn-out and feeble adherents of Stahl. By this imprudent alliance, the opposers of the French school only fortify their enemies more securely; and we have therefore judged it our duty to expose the fallacy of such a measure, in the present instance, in which the Italian academicians have adopted it. In plain terms, the calm and impartial friend of science will desire to see the dogmatism of the new theory modified, its systematizing phrenzy checked, and its obvious mistakes corrected, without any recurrence to the errors and ignorance of the old: he will find it easy to appreciate the merits of the system which Black and Cavendish, Lavoisier and Berthollet have erected, notwithstanding the fallacies which their followers have engrafted upon that immortal work; and, acknowledging that, even with all those imperfections,

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it approaches infinitely nearer to the truth than the theory which it overthew, he will feel that he only desires its weaker parts to be exposed for the sake of its transcendent excellencies.

Although we have devoted this article to the chymical papers contained in this volume now before us, yet there is one of a medical, or rather of a physiological nature, so very important, that we must add an account of its contents here, as the other pieces belonging to the same class do not merit a separate head. We allude to the paper entitled, '*Observations, dissections, and experiments on the bite of enraged animals*,' by M. Rossi. It contains a description of four curious cases, and a variety of observations, somewhat declamatory, which we shall take leave to pass over. The cases deserve much consideration; and, in hopes that some of our readers may accept of M. Rossi's invitation to collect all the facts relative to hydrophobia, and diseases connected with it, so as to form a mass of materials for a right theory of cure, we willingly contribute our share, and give his observations as much publicity as we can.

A young man was bit by a cat in the leg; he suffered acute pain for some time; this ceased, and he became well. Every method of preventive for hydrophobia was used, cautery, caustic alkalis, blisters, &c.—all in vain: the 49th day the symptoms appeared, and the patient died with his teeth fixed in a piece of iron which he had seized hold of. It is remarkable, that the cat had only been rendered furious by being confined in a room, and tormented. On dissecting it, the brain and cerebellum were found to be inflamed, with other symptoms of disease, and similar appearances were found on dissecting the patient.

In the next case, nothing remarkable occurs, except that the ear of the patient was affected every night at the very hour at which he had been bit, during the fifty days which elapsed from the bite to the commencement of the disease. The bite was in the cheek; and no account is given of any symptoms, by which this case can be distinguished from the ordinary forms of hydrophobia.

The third case, is a complete confirmation of the principal fact observable in the first. A cowfeeder having remarked a cat often coming to steal the milk in his dairy, lay in wait for it, and attacked it with a hatchet. There was a considerable contest, till at last the cat, unable to avoid an approaching blow, leapt at the man, and seized his chin, whence there was no possibility of detaching it, but by cutting off its head. The patient was carried to the hospital, and all the preventives of hydrophobia, as cautery, purging, bleeding, and mercurial salivation applied. On the 20th day, the fatal symptoms made their appearance: he experienced

perienced much difficulty in swallowing water, but this he overcame with great fortitude;—the difficulty increased, and the wound became bad;—the patient grew furious—endeavoured to bite every one that came near him—was bound with chains, and immediately broke them in pieces—leapt from his bed—ran up and down the hospital, attempting to bite all he met—till, reaching the outer door in order to escape, he was seized with a shivering, and fell down dead. The dissection of his body offered appearances similar to the others; the ramifications of nerves on the pharynx were, as usual, very tender and easily broken, and the pharynx itself livid.

The last case is that of a man bit by a '*chat enragé*,' but in what way '*enragé*,' we are left to guess from the general tenor of this paper. He appears to have suffered little pain, though the bite was deep, and the suppurations copious. He was treated as usual, and seemed at length quite cured. For a month after this he was in perfect good health, then he became weak and feverish, and in fifteen days '*il mourut de consomption.*' On dissection, the appearances correspond with those of the above cases, though no unequivocal symptom of hydrophobia had manifested itself during life.

Our author concludes in a curious kind of style. He says he wrote to the celebrated professor, Dr. Ginlio, exhorting him to turn his thoughts towards the nature of hydrophobia, and to contrive some new method of treatment, which might be made public after its utility should be proved. He adds, that Dr. Ginlio has thought, and has contrived a new method, as he was desired; that they both agree about its excellence, and that it is now to be given to the academy. We conceive that our author could not delay a moment to communicate such a treasure; consequently, he must mean to describe it in the following terms, which are added immediately to the foregoing introduction.

'We propose continually to make, repeat, and vary in a thousand ways, our experiments on all the cases of hydrophobia which occur; and we shall not fail to publish our results without delay, inviting all the learned to assist us with their observations, and thereby to alleviate the miseries,' &c. &c.—'The above observations show, that the gastric juice is almost always abundant, green and acid, in hydrophobia—Let our attention be directed towards this fluid.' p. 265. Part I.

Abstracting from the singular style of the conclusion, and, in general, of the author's remarks, this paper affords important information. It appears that certain animals, on being violently affected by fear or rage, become subject to some morbid influence, which deranges their system, and gives them the dreadful power of communicating the disease by their bite. It is singular that the

the domestic animal, which, of all others, is the most subject to the wanton cruelty of man, should thus possess the most formidable of all means of revenge, and become suddenly endued with the fatal weapon, at the very moment when the injury has been inflicted. Those who are fond of seeing final causes in every arrangement of the universe, and whose imprudent zeal has, more than all the scepticism of all the philosophers, brought into disrepute the most sublime of human speculations, will eagerly seize upon this fact as an illustration of the design, constantly observable in the works of nature. But nothing can be more thoughtless than such an argument; for, if design is here exhibited, it is unaccompanied by benevolence. The weapon with which those animals are endued, is useless for defence, and serves only for revenge; it is used indiscriminately against the assailant, and the indifferent spectator; and finally, it is as certainly fatal to the possessor, as to those against whom it is employed. The whole fact must, therefore, be classed among those inscrutable dispensations of Providence, from which we are not permitted to draw any inference, except that of our own profound ignorance.

It is of more importance to remark (and for this purpose we have introduced the present notice,) that the dreadful lesson taught by the cases here stated, should be carefully kept in mind by all who are, from their tempers or their habits of life, much exposed to the temptation or the necessity of using harsh methods with the most common of our domestic animals.

ART. IX. *Sermons.* By Sir Henry Moncreiff Wellwood, Bart. D. D. & F. R. S. Edinburgh, one of the Ministers of St. Cuthberts, Edinburgh, and senior Chaplain in Ordinary in Scotland to His Royal Highness the Prince of Wales. Edinburgh, 1805. pp. 480.

IT would be improper, perhaps, to pass an unqualified censure on any particular style of pulpit eloquence. 'Whate'er is best administered is best,' is a maxim at least as applicable to preaching as to government. Good sense and good morality are indispensable requisites; and if the preacher give us these, he may be allowed, in other respects, to follow the dictates of his peculiar genius or fancy. The animated oration—the calm exposition of moral duties—the critical illustration of scripture doctrine—and the serious exhortation to a holy life—are all adapted to the pulpit, and are all good in their kind. Attempts at wit and vivacity, indeed, might probably be proscribed, without any great disadvantage. A preacher is contemptible, who does

does not seem to believe what he says; and we can scarcely think him much in earnest, who seeks occasion to be facetious, when 'he reasons of righteousness, temperance, and judgment to come.' There are preachers, however, of this peculiar vein; and there are likewise hearers on whom an epigrammatic point may have more effect, than 'proofs of holy writ.' Whether, therefore, under an enlarged view of St. Paul's maxim, 'to become all things to all men,' even the *witty* style of preaching may not be occasionally tolerated, we will not undertake to determine. It is, however, clearly the worst style; and since we have discovered the worst, perhaps we may likewise be able to point out the best.

The admirers of eloquence and fine writing will be apt in general to declare for the highly oratorical sermon, a species of composition of which we have few examples in this country; and accordingly, the great French preachers are commonly referred to, as those who have come nearest perfection in their art. We are however induced to suspect, that oratory, considered as an art, can have no very powerful effect in the pulpit. *Artis est celare artem*, is an indispensable rule of rhetoric; and no eloquence can ever be impressive which appears laboured and artificial. Now, an orator of genius, when he undertakes to delineate those pathetic circumstances in the fortunes or conduct of men, with which every human heart is ready to sympathize, will easily be able to rouse the feelings of his audience; and all the exaggerations and amplifications which he employs for this purpose will commonly escape the notice of those who have become interested and warm in the description. But the case is materially different with those representations of the future destinies of men, which afford the chief scope for pulpit eloquence. As these things are not the objects of our experience, or of our ordinary consideration, there seems to be a species of incredulity and indifference with respect to them in the human mind, which is only to be overcome by powerful reasoning and serious exhortation, and is more likely to be increased than abated by the trick and the glitter of rhetoric. Instead of being ready to overlook the art of the orator, we are in this instance rather on the watch to discover it; and if once he appears to be employing artifice, his influence with us is at an end. He may continue to delight us as a poet with his imagination and spirit; but we shall pay little regard to him as a teacher of important truth. Compare the sermons of Massillon with the orations of Demosthenes or Cicero. The Greek and Roman orators, no doubt, had often bad causes to support, and excited the sympathy of their audience, by counterfeiting emotions which they did not seriously feel. The French preacher, on the other had, we must

must presume, was always in earnest, and firmly believed the truths which he delivered. But, by adopting the style of a rhetorician, he seems at all times to be acting a part; while those illustrious ancients appear quite simple, even when they are employing their utmost artifice and skill. The plain statement of the preacher's sentiments on the subjects which he is treating, expressing honestly what he thinks and feels, without any softening or exaggerating, appears to us to be the best style of preaching. This is compatible with many very fine strokes of occasional eloquence; but, in general, the style will rather be firm and steady, or, at the most, warm and earnest, than highly coloured and impassioned; and, after all that may be said of his tediousness and slovenly composition, perhaps Tillotson is still the justest model for the eloquence of the pulpit.

The volume before us is a very respectable example of this manner. The sermons of Sir Henry Moncreiff are evidently the productions of a sensible and serious man, who trusts more to the weight and importance of his matter, than to the manner in which it may be set off and adorned. He never aims at astonishing his reader, nor does he possess any peculir felicity or polish of expression; but he is always instructive, commonly forcible, and his language has at least the merit of perspicuity. Without entering into the merits of each sermon in particular, it will be sufficient merely to mention the subjects, and to quote a specimen. The contents of this volume are as follows: 1. On the unequal allotments of Providence—2. On the minute improvement of the blessings of Providence—3. On self-denial—4. On the form of godliness—5. On Christian faith and morality—6. On the result of good and of bad affections—7. On the inheritance of a good man's children—8. On the doctrine of grace—9. On the conduct of Providence to good men—10. On the general spirit and effects of Christianity—11. On the universal promulgation of Christianity—12. The same subject continued—13. Prospects of futurity—14. On the cultivation of personal religion. From the sixth sermon, 'On the result of good and bad affections,' we select the following striking reflections on the influence of parental love.

'If we have been the children of worthy and affectionate parents, who are now no more, the remembrance of their love can never cease to be interesting. We have pleasure in believing that we have derived from them our best qualities, or that we can refer to them our success in life. We look back with a melancholy satisfaction on their anxieties for us when we had no care of ourselves; on their solicitude to protect or to warn us; on the affection with which they supplied our want of experience; on the looks of kindness with which they gratified us; on the instruction

instruction and the discipline by which they endeavoured to form us for the path of life; on the fervent prayers by which they purified them; on the earnestness with which they spake to us of duties and of godliness, when they admonished us of the evils to come, and strove to fortify or instruct us by "the labour of love;" on the sanguine hopes which they delighted to indulge, from the progress of our talents, or from our good conduct or success in the world, or from our duty and affection to them, or from our ardour in good works, or from our fidelity to the God of our fathers.

'These are the most useful recollections of the human mind. It is the law of our nature, that the parents go down to the grave, and leave their children behind them. But if we can remember our parents with those happy impressions of their affection and fidelity, we have that from them which will interest and admonish us as long as we live. If we have been faithful to the influence of parental love, it will never lose its hold of us.

'Why should not each of us examine himself fairly on the subject? 'Has my conduct been at all worthy of the faithful discipline of my parents; or of their earnest admonitions to guide and to bless my youth; or of the last impressive prayer which came from "the love which perished" in the grave?

'Do I feel the influence still of parental solicitude, to restrain me in the hour of temptation? or to revive on my conscience my early impressions of godliness and of good works? Or, am I conscious that there is a motive to whatever is pure or estimable, ever returning to my thoughts, from the sense of my obligation to justify the hopes, and to be worthy of the examples, which are now no more?

'It is consolatory, indeed, to be able to answer these questions to the satisfaction of our own minds. If we give thanks to Heaven that those "whose love has perished" died in faith and patience, and "commanded their children to keep the way of the Lord," we must feel that the impressions, to which these questions relate, are rivetted on our hearts; and that for the influence which they preserve on our conduct, we shall one day answer to God.

'Ah! what shall those men do, who know that they deliberately trample on the memorials of parents who loved them in the fear of God? The love which lost its influence before it could avail them, and of which they must feel themselves to have been unworthy, though it perished in the grave, shall rise up at "the judgment of the great day" to bear witness against them, "except they repent." The thought is deep and awful. If they have any tenderness of mind, and God hath not forsaken them, it will reach the bottom of their hearts.

'But it is impossible not to feel how much the recollection of parental love, which recals us to prayer or to penitence, ought to suggest to other men with regard to the love which has not yet perished. Their parents admonish them still, and pray for them. Surely this is the time to consider how precious the impressions ought to be of God and of duties,

ties, which are produced by their earnest and affectionate endeavours to be faithful to God and to them. 'My son, said Solomon, keep thy father's commandment, and forsake not the law of thy mother. Bind them continually upon thine heart, and tie them about thy neck. When thou goest, it shall lead thee; when thou sleepest, it shall keep thee: and when thou awakest, it shall talk with thee." p. 170—174.

From the 'contents' our readers will perceive, that several of these sermons are on subjects entirely scriptural; and, indeed, the motives to virtue which the reverend author lays down, are most commonly drawn from the peculiar and distinguishing doctrines of Christianity. In the sermon on 'Christian faith and morality,' he, indeed, plainly states it as his opinion, that there is no way of enforcing Christian morals with effect, without deriving them from the sources of Christian faith. This is a point which seems to be viewed in very different lights: and although we are not perhaps very competent judges of the question, we shall venture to make a very few observations on it.

We think it then very plain, that a preacher who studiously keeps Christianity in the back ground as something which encumbers him, and of which he would be as well pleased to get rid of, is by no means doing his duty. Whether that religion is true or false, is another question; but, surely, no one who thinks it true ought to be ashamed of it, and no one who thinks it false ought to preach under its authority. The attempt then to preach morals as something separate from Christianity, is highly indecent, and has always a paltry and pitiful effect. Upon this subject, nothing can be more strongly, or, indeed, happily expressed, than the following very admirable passage from the sermon just referred to.

'I beseech you to consider,

'(2.) What the morality is, which is industriously separated from the doctrines of Christianity, or is inculcated independent of its relation to them.

'When I say that morality is separated from Christianity, I do not mean to affirm that this is always directly done. It happens more frequently, that the doctrines of the gospel are passed over in silence, or are treated as subjects which a very wise or enlightened man does not think it necessary minutely to consider; while moral duties are stated, with few exceptions, as if they had no reference to them.

'Is the morality which is thus inculcated, the pure, the universal, the watchful, or the uniform morality represented in the gospel? On the contrary, it is a morality which has seldom any relation to God, or to the duties which we owe to him; a morality which applies chiefly or entirely, to our present interests; the morality which the fashion, or the general manners of the world require; the morality which derives its chief motives from present situations, and from present events, the

the morality of easy, pliant, and conciliating manners, which neither bears hard on the vices, nor goes deep into the consciences of mankind; the morality by which men learn to declaim against religious zeal, and against every thing which has the aspect either of scrupulous holiness or of earnest religion, but which can teach them to look without any dissatisfaction or murmur, on the dissipations of the world, on the profane, and on the sensual, and on the oppressors, and on the hardened.

'Men of sound understanding ought to be able to determine for themselves, whether this is the morality of the gospel, which is inculcated with scarcely any relation to it, and from every motive rather than the motives of religion; in which the lessons of moral duty, separated from the language of Christianity, are every day brought nearer to the maxims and to the manners of the world; and from which men learn, or are taught to believe, that, wretched as their progress is in moral duties, they must derive from it their only hope of salvation.

'The unbeliever, and the false professor of christianity, insensibly adopt the same language. Under the pretence of setting morality and Christianity at variance, they unite their endeavours to sap the foundations of both. They first banish from their thoughts the substance or the peculiar tenets of the gospel, as a metaphysical system which may well be spared. When they have effected this, their work is almost done: for the morality which they profess to retain, is easily reconciled to the vices of the world; and though it were pure, soon becomes a dead letter, separated from the principles or motives which can alone support it.

'It is impossible not to remark, besides, that the supple and accommodating morality, which bends to every fashion, and accords with every new opinion; which startles at every approach of zeal for religion, but which fears nothing from the lips of ungodliness or of infidelity: is, in its most favourable aspect, at least far removed from the holiness of heart and life, by which the sound believers of the gospel are represented in the New Testament, as 'becoming the temple of God,' and as 'having the spirit of God dwelling in them.' p. 147—150.

But while mere morality, or natural religion, are out of place in the pulpit, when they seem to be opposed to revelation, we cannot help thinking, that a preacher must narrow his sphere of utility very needlessly, if he thinks it his duty, on all occasions, to introduce the peculiar views and motives which Christianity suggests. If he seriously believes that religion, he certainly never will say any thing that can have the smallest tendency to obstruct its influence: but he may not think it convenient, or he may not have the inclination, to make it the sole and exclusive foundation of all his counsels and exhortations. What is called the *evangelical* style of preaching, appears to us an opposite extreme from the purely *moral;* and like all other extremes it is bad. There is surely a difference between the present times, and those in which Christianity

Christianity was at first preached by the apostles. The seed has been sown, and during the course of eighteen centuries has in one way or other been producing fruit. The work need not be done over again from the beginning; and even if a preacher thought it necessary once more to lay the foundation, yet it would not be in his power. The preaching of the Apostles themselves, would have appeared bold and extravagant, if they had not been able to accompany their words with 'demonstration of the spirit and of power,' if they had not appealed to miracles and to the clear fulfilment of prophecy. Preachers now must take the times as they find them; and as they have not those supernatural evidences, they must adopt a lower and more moderate tone. They must not disjoin themselves so entirely from the common business and common reasonings of the world, or represent Christianity as a subject which is to be judged of, or inculcated, upon principles fundamentally different from those which regulate our opinion and belief upon matters of smaller importance. In the preachers of the 17th century, who are indisputably believers in revelation, and who very frequently refer to its distinguishing tenets, we may yet perceive an ease and freedom, which demonstrate that their faith did not at all shackle their minds, or prevent them from resorting with the utmost readiness to every source of morals or reason. Dr. Barrow will in one sentence quote an Apostle, in the next a Father, and in a third Aristotle; and he will then pour out, with equal alacrity, the rich stream of his own full and overflowing eloquence. The evangelical preachers of the present day, seem to be in horrors, if they happen to push their foot beyond the magic circle of Scripture; by which means they both renounce the assistance which they may receive from their general learning and knowledge, and give a disagreeable impression of the sacred writings, as if they were a repository of strange and peculiar doctrines, with which the common sense and feelings of men can never be permitted to mingle. There is something extremely disagreeable to the minds, we do not say of men tinctured with infidelity, but of the sensible and reflecting part of Christians, to be kept in the trammels of mystery, and not to have their religion amalgamated in some measure with their customary and daily sentiments; to have one set of thoughts and phrases for Sunday, and another for all the rest of the week. If we have any objection to the Sermons before us, it is, that the reverend author is somewhat too constant in enforcing scripture doctrine; although we state this opinion with hesitation, when we consider his great experience as a clergyman, and the impression of cool reason and practical good sense which is stampt upon the whole volume. We would rather, from this peculiarity, take occasion to suggest

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to such of our readers as have adopted the common philosophical principles of the duty, that a circumstance of this kind in the sermons of a man whose understanding and abilities are unquestionable, is a point which, on their principles, they will find no little difficulty in accounting for. When we see such a man enforcing with great seriousness those doctrines of revelation which, in the eyes of the world in general, and especially in those of sceptics, have most the appearance of "foolishness," what is the conclusion? The charge of hypocrisy is highly illiberal, and the supposition that, on these subjects, the author's understanding has been warped by his peculiar profession, to say the least of it, is somewhat presumptuous. Is it not more reasonable to suspect that there must be solidity in the *foundation*, when we find a very wise man so carefully employed about the *superstructure*?

Upon the whole, this volume, we conceive, will afford the most solid satisfaction to the serious reader, for whose use it is principally intended, and must command the respect of those who are not habitually occupied with the subjects to which it relates. They will never be disturbed with the author's admiration of himself, or his misconception of the subject; nor will their impatience be excited by any thing puerile, declamatory, verbose, or inaccurate. They will find every where indications of a vigorous and independent understanding; and though they may not always be gratified with flights of fancy, or graces of composition, they can scarcely fail to be attracted by the unaffected expression of goodness and sincerity which runs through the whole publication.

ART. X. *De l'Usage du Numeraire dans un grand Etat.* Par le Cit. Toulongeon.

(*From the last Volume of the* Memoires de la Classe des Sciences Morales et Politiques de l'Institut National.)

THIS is one of the many productions that have lately appeared in France, as well as in England, from the pens of certain political economists, who, without genius to create new systems, or acuteness to perceive distinctly the errors of the old, are sufficiently fond of singularity, to reject both the great theories which formerly divided the opinions of mankind on the subject of national wealth. The first step which these authors set out with, is a contemptuous disavowal of the doctrine, that money constitutes

constitutes the riches of a people; but in a few pages we generally find how imperfectly their minds have been cured of this vulgar but most natural prejudice; and they no sooner come to lay down their own theories, than we perceive, that, to the fundamental errors of the mercantile system, they have added nothing but mistakes from which it was free, and contradictions which could only arise from not comprehending it.

M. Toulongeon is too much above ancient prejudice to believe that 'the richest nation is that which possesses the greatest quantity of circulating medium;' yet he has not proceeded far in the developement of his own doctrines, before you discover him uniformly substituting money for capital, and reasoning upon the employment and distribution of stock under the appellation of '*numeraire*.' A similar desire to shake off the prepossession in favour of specie, which constitutes the chief error of the exploded doctrine, induces him to seek for a substitute, in credit; and then his theory only differs from the old one, in ascribing to paper money all the powers which were formerly attributed to the precious metals. He does not, like the more vulgar class of politicians, declaim against trusting the prosperity of a nation to the flimsy resources of credit; but he goes further than Mr. Pinto himself in his notions of the powers of credit, and argues as if credit could create capital, rather than draw unemployed stock into use. His theory is delivered with more than the ordinary presumption of a person who mistakes his ignorance for discovery; and though he concludes his performance with a modest prediction that it will 'find a place in the portfolio of projects consigned to oblivion,' yet the whole tenor of the paper, and especially of the passages which stand next to this prophecy, demonstrate that he belongs to the small number who do not believe it will be fulfilled. The tract indeed abounds with well-turned and delicate compliments to the Citizen Toulongeon, who seems verily to think that he has removed all mystery from the difficult subject of circulation and credit; that by a most simple theory he has explained in what manner money may enrich a people; and that, by a happy deduction from his fundamental proposition, he has pointed out the means of moral, economical, and financial improvement to his country. A corollary from the whole encloses, rather than developes, a singular scheme of public credit, which is to prove a substitute for national debts; and we think our readers can scarcely peruse the analysis of these discoveries, without recognizing some portion of the same genius that once inspired the famous M. Herrenschwand, to which the world owes his memorable '*Adresse aux vrais Hommes de Bien.*'

Money, according to our author, must possess two qualities, in

order to constitute the wealth of a state—a rapid circulation, and proper distribution. The good effects of quick circulation are too obvious to require proof—it enables a single piece to perform the office of many. Let us consider then what is meant by a *proper distribution.* He pursues a long case in figures for the sake of illustrating this point; but the substance of the statement is, that if there are two nations equally rich and populous, and if the same quantity of money is so distributed, that in both a small class shall have a larger share of it than the rest, but that the disproportion shall be much greater in the one community than in the other, then, in the former, the bulk of the people must labour with little or no assistance but what they derive from their own hands, while, in the latter, they have the aid of a considerable portion of the great instrument of commerce. On this ground, our author proceeds to construct a comparison between the happiness of the two communities; and to show that where almost all the money is in the hands of the rich, the poor must labour for them at competition prices in order to live, must devote their whole lives to drudgery without having time to think, and must see their condition growing worse and worse as their necessities augment. But where the poor have a just proportion of the circulating medium, they labour to enjoy as well as to live; they have time to reflect and improve their minds; and their fortune is continually augmenting, while their yearly overplus is anew employed with profit. At this period of his reasoning, our author stops to remind us, that he has been all along speaking of money and not of wealth. But this will not do. If he is resolved to describe the effects of an unequal distribution of wealth, under the name of the unequal distribution of money, we cannot allow him to force his theory upon us in the form of a definition; and if he will use *money* in the sense of *wealth*, he must find some other word to express what is commonly meant by money. It is however obvious, that there is much inaccuracy even in his enumeration of the effects of unequal distribution, whether we permit him to call it of money or of wealth in general. How can the rich make the poor work uniformly at a competition price of labour, when their own superfluity of wealth is occasioning a competition of consumers, and is indeed the very origin of high wages? The idea of such distribution is absurd. The engine may be adjusted at first in whatever manner you please; but its first movement must tend to derange the pre-established proportions, unless the rich are to retain their wealth unconsumed, and the poor to work for nothing.

To his supposition of the money in the two states being divided with different degrees of inequality, our author proceeds to add another; that, in the country where the small number possess the greatest

greatest proportion of the circulating medium, the real wealth (we presume he means the other parts of wealth) is equally diffused over the whole community; while, in the country where the money is distributed with much less inequality, the real wealth is confined to the class possessing the greater proportional share of the circulating medium. It will follow, according to M. Toulongeon, that, in the state where the distribution of the money is most disproportionate, the class which possesses the greater share will feel money to constitute their whole force, will draw the rest to them, and will rapidly depress the other classes more and more by this means. But, in the country where the money is less unequally distributed, the class which possesses the greatest share, possessing also most real wealth, will perceive that real wealth is only useful to them when employed; whereas money, being the representative of all things, is valuable in itself—it gives them a command over every other commodity. They will therefore render their real wealth as like their circulating medium as possible, by means of credit, which will enable them, as it were, to coin every part of their possessions, to form a paper money that may be received, from the confidence reposed in their wealth and integrity, and may represent both their specie and their goods. Thus the rich will augment their own stock by the amount of the paper which they circulate; the goods, on the credit of which it is emitted, remain; the specie becomes the medium of exchange in the retail trade, and consequently is transferred to the hands of the poor; the community benefits by the whole amount of the paper money on the one hand, for this is clear gain, not accompanied with any loss of goods; and by the accommodation given to the poor on the other, for they are excluded from a share in the paper circulation, the nature of which confines it to wholesale dealings, and they receive the specie itself. Hence our author deduces the main principle of his strange theory, that the public good requires such an arrangement as may throw the specie of the country into the hands of the people, while the paper money, that is, confidence and credit, constitute the circulating medium of the rich.

Nor are these direct benefits the only ones which arise from a tolerably equal distribution of the specie. The effects of that confidence to which such an arrangement gives rise, are of themselves highly important. Confidence promotes honesty, knowledge, order—and lays the foundation of all the domestic virtues. The distribution of comforts among the inferior orders, our author observes, is the best security for their virtues and regular conduct; a remark to which we cheerfully subscribe, and which we willingly quote as in reality the only truth we have met with through the whole course of the tract. It is introduced with

some observations in M. Toulongeon's own inimitable manner, upon the beauty of seeing wealth equally divided; of a community in which '*on ne voit pas la maigreur à coté de l'enflure, et l'embonpoint se remarque partout.*'

In a financial point of view, equal advantages result from leaving the money in the hands of the people: For, is it not plain, says our author, that a hundred proprietors of a thousand a year each, can more easily afford to contribute two hundred, than a single proprietor of a hundred thousand can to contribute twenty thousand? As there is no answering this, he only remarks, in an easy way, that the reason of the difference is the greater profit which the industry of the small proprietors (i. e. annuitants) derives from their revenues; thereby curiously confounding income with capital.

M. Toulongeon now sets no bounds to his eulogies upon credit. It is the money of great towns, coined by a single dash from the pen of a banker or a merchant; it should be kept sacred to grand affairs, while cash ought to be scattered among the petty dealers and day-labourers. It multiplies great capitals by representing them; it multiplies money also, which it represents as money represents goods. And all this, and a vast deal more of the same kind, is delivered with as much confidence, and as much affectation of the precise language of demonstration, as if the author had really annexed some meaning to it.

But the confidence with which he asserts, as facts, conclusions which he draws from his theory, and which are directly the reverse of the truth, deserves some notice. Credit, according to him, depending entirely upon the confidence reposed in the solvency and character of private individuals, banks can only be established on the same basis; and all such schemes of banking as derive their origin and support from government, or from the union of many individuals, with a joint stock, must want credit. No confidence, says he, can ever be reposed in the government, which is above all law; it can, therefore, have no credit. No confidence can be given to ideal bodies or corporations, unless the members are each liable for the whole engagements of the company. It is to single persons, therefore, and not to bodies, that an individual always looks for his security. To read such extravagant assertions one would think that the author's knowledge extended, literally, no farther than the pages of his own theory; that he had never heard of any one public banking company; that he was utterly ignorant of the credit given to government paper in almost every part of Europe. The prejudice in favour of a system seems to resemble the instinctive affection of the lower animals for their offspring; the more deformed and sickly the production is, the more obstinately

nately do the parents close their eyes upon its defects, persisting in the belief, that all around is in harmony and concord with the puny object of their care, which in every limb perhaps, forms an exception to the rest of the creation. Had Citizen Toulongeon conceived an opinion, that walking upon the head is preferable to the other mode, and in support of this idea, appealed to the practice of all able-bodied persons and quick walkers, he would scarcely have produced more than a fair parallel to his doctrine of credit, as applied to the history of banking companies and government paper.

The next effect of a system which is to throw the specie into the hands of the lower people (uniformly confounded by our author with the retail traders, as if the rich did not participate still more than the poor in the benefits of this trade,) is the prevention of hoarding. As soon as a paper money is established, which can take the place of cash in great transactions, all hoards of the precious metals will be laid open, and the only cause of the present high rate of interest in France will be removed, M. Toulongeon, it may be observed, is quite ignorant of the nature of interest, which he denominates the price of money, and never once suspects to be the rent paid for all sorts of stock. But one kind of argument used on this head is extremely amusing, and, we will venture to say, of as universal application as any rule in logic. In order to show that the high price of money in France is no proof of its scarcity (always conceiving high rate of interest, and high price of money to be synonymous,) he says, the argument may be retorted, and made to cut the other way; for, if money is borrowed at a high price, it is clear that there are people who can afford to pay that price, and who have, therefore, plenty of money. Thus, the higher the price of any commodity is, the greater its plenty, since every high sale infers a high purchase.

And here it is necessary that we should let the author speak for himself. The last benefit to be derived from his distribution of specie is of so extraordinary a nature, and delivered in such a strange language, that no abstract could do it justice.

'On a beau abuser d'une verité, rien ne peut faire qu'elle cesse d'être une verité; comme Dieu, la verité n'a ni commencement ni fin; et comme la lumiere du soleil, elle peut être voilée mais non obscurcie; elle reste et reparoit, telle qu'elle fût d'abord. Parce qu'on a horriblement abusé du mot *peuple* et du mot *pouvoir*, il n'en restera pas moins eternellement vrai que le peuple est la portion la plus utile ou plutôt la plus nécessaire à la chose publique, et que le pouvoir qui la regit tendra toujours à la maîtriser: or la richesse est un pouvoir le plus fort de tous, parce qu'en changeant de main, il ne change pas de nature; l'esprit de corps s'y conserve et s'y remplace; c'est le batallion que l'on appeloit des

des *Immortels*, parce que les places vides n'y resterent jamais vacantes. L'or de toutes les matieres la plus dense, n'a qu'un contrepoids, c'est lui-même; si le peuple n'en possede pas une grande partie, il sera bientôt asservi, parce qu'il n'y aura plus d'equilibre entre l'or qui attaque et l'or qui se defend. Le maître le plus imperieux, c'est le besoin, et les besoins du peuple sont toujours des besoins de premiere necessité qui commandent plus imperieusement. Si peuple ne peut connoître l'usage d'aucune autre richesse que de l'argent monnoyé. Les pierreries, les productions de l'Inde, les meubles de prix, les chef-d'œuvres de l'art, les effets au porteur, tout cela n'est pas à la portée du peuple; sa richesse doit courir les rues, et celle-là, en bonne police, doit lui être reservée: cell-là defend de la domination des autres, et lui ôte l'envie d'attaquer leur inevitable prééminence. L'indigence affaiblie sent tout le poids de ses fers; elle en est accablée, parce qu'elle n'a pas la force de les porter, jusqu'à ce que l'indignation lui donne un moment la force de les soulever; mais cette crise n'est qu'un delire d'accès, funeste pour elle-même. Les souffrances du besoin ont fait plus de revolutions politiques que les opinions. L'etat actuel de la France est précisement tel qu'on peut le souhaiter,' &c.

Is it too much to denominate this the most incoherent piece of writing which has appeared in political science? We are far from insinuating any resemblance between the two authors; but it is curious to observe, that the grossest absurdity of this whole passage is founded upon Lord Lauderdale's famous mistake of scarcity for value. Citizen Toulongeon conceives the people incapable of using any other riches than specie; and clearly shows that he holds riches only to consist in objects which are scarce, such as colonial produce, bills, fine furniture, and the like: just as Lord Lauderdale excludes from his list of valuable articles, all that are indefinitely abundant.

It is now time, however, that we should mention the great plan by which a system of solid finance is to be laid, and the various advantages secured, which result from the specie circulating among the poorer classes of the people. The unexampled obscurity with which this scheme is described, must be our excuse if we have not been able to seize a very distinct view of all its parts. The funding system, according to citizen Toulongeon ought to be abandoned, as being an expedient rather than a resource, and as imposing the necessity of finding means to pay what has been previously borrowed during the emergency of affairs. But the difficulty is to find a substitute for this policy; and he recommends, that, instead of always borrowing, a great and wealthy state should so arrange matters as always to lend. In his way of viewing the subject, nothing can be more easy. The nation has only to lend its domains to such persons as can prove that their private fortunes are equal in value to the capital which they obtain from the

the public, and can thus give good security for the payment of interest or rent, as well as for the payment of the value of the principal itself, when the exigencies of the state may demand its restoration. Thus, if a war breaks out, the nation has occasion for a considerable proportion of the whole capital, and demands an equal share from each debtor, or draws a bill upon him. This every one will receive, from knowing that all the public debtors have property to at least double the amount of the greatest sum for which the government can issue drafts upon them. The expenses of a war do not require very great sums immediately on its breaking out; the debtors will, therefore, have warning to raise the money required of them, even should payment of the bills be demanded. But our author holds it to be clear, that the public confidence in the goodness of those bills, will circulate them for so long a period, that before any payments can be demanded, the operations of sinking funds, &c. will have enabled government to retire all the paper. Such is the substance of the scheme in so far as we have been lucky enough to unravel it; and its fundamental postulate—the assumption, that government sets out with a clear list and a capital in national property, equal to the whole expenses of the most difficult emergency, is a sufficient excuse for our passing over the details without any further remark.

It is by the wonderful paper system which such a plan must create, that our author expects the great object will be accomplished of banishing specie money from the dealings of the wealthy classes, and confining it to the hands of the common people. Government will only have to admit paper money in the payment of the revenue, both in delivery of the ultimate produce by the general tax-gatherers, and in the first payments made by the partial tax-gatherers, and then all will arrange itself as the theory of citizen Toulongeon requires; the paper money will never reach the small transactions of the common people; they will be obliged to have specie, or to want money altogether; and they will be enabled to retain what they get; because, only paying it as tax-money to persons who can pay in paper to the central bureaus, they will immediately receive it again in circulation.

The thoughtlessness of all the parts of this reasoning is, we believe, entirely without parallel in the most unthinking political pamphlet that ever called itself a plan. Assuredly, the author has complied in all strictness with the principle which he lays down for the science of finance.—'*Qu'elle ne doit pas s'elever plus haut que celle des quatre regles de l'arithmetique.*' He has made sure of not going beyond those rules, by taking care not to reach them.

Wretched

Wretched as the texture of this memoir undoubtedly is, it may not be altogether uninteresting to contemplate its errors, when we consider the place in which it appears. The thing which we have been looking at, is literally the only production on the science of political economy, which the National Institute has deemed worthy of a place in its moral and political volumes, for the last five years, if we except another tract, in the same style, and from the hand of the same master. To find such a performance standing single among the labours of that body which has succeeded to the academies of France, is indeed melancholy; and evinces, either that the influence notoriously exerted by the government towards the encouragement of exploded errors in political economy, has extended to the first literary body on the continent, or that there do not exist within the circle of the Institute, the talents and the lights sufficient to preserve in their purity the first principles of that science. Nay, it is quite enough that such a paper should be found at all in the Academy's publications. Its existence there, amply proves the degraded state of political knowledge in the degenerate country of Quesnai, Turgot, and Condorcet. The National Institute, it must always be remembered, do not, like our Royal Society, decline committing themselves, by giving their opinions as a body on the questions which come before them for discussion. Through the whole of their volumes, we meet with constant evidence, that what is given to the world under the name of their Transactions, contains, if not the opinions of the active members, at least nothing from which they would widely dissent. For proof of this, we refer particularly to the history of the classes, in which the sentiments of those bodies are expressly stated upon a great variety of detailed points. Thus, their opinions upon the comparative merits of papers are distinctly given. Public events, remotely connected with science, are commented upon. The joy, for example, of the moral and political class, is warmly expressed in the volume now before us, upon the event of *General Napoleon Bonaparte, a member of the mathematical class*, having been elevated to the head of the government. The feelings of this body, upon some tender subjects, are also communicated to the world. 'The class was struck as with a thunderbolt, at the sudden death of the resident member Baudin; and though it will long retain its sorrow, some consolation has been received from the election of Citizen Bigot. (p. 314.) Nor does the class seem insensible (and always as a body, be it remarked,) to the tender effusions of its absent members. Notices are given of their affectionate letters. Thus, we are told that 'Citizen Dupont, before setting out for America, wrote from the vessel in which he was to sail, a letter, filled with expressions

expressions of the most touching sensibility, and ending with an attestation, that his last vows on leaving Europe were for the prosperity of the Institute.' The attention of this body is also, from time to time, directed towards the latter end of all things, if we may judge by no less than two reports of committees appointed to inquire into the proper form of funeral for the members. The Institute orders, that black crape shall be worn round the left arm, and complains loudly of want of accommodation in the burial ground. In short, the whole memoirs of this society attest, that the members act and think with a certain *esprit de corps:* and entitle us to conclude, that nothing is published in their volumes which is repugnant to the general opinions of the acting fellows. Had there been any belief in, or concern for the truths of political economy, among those who compose the moral and political class, nothing could have prevented the rejection of the paper which we have described to our readers, by a short sketch of its contents. The conclusion is inevitable,—that this science is gone down in the first circles of France. The application is obvious. Let it find a refuge in our free and enlightened country; and we may be assured that its progress will be in proportion to the attention, not the favour, with which every new work is received, and the impartiality with which all new doctrines are scrutinized, by whatever names they may be recommended, or with whatever confidence they may be advanced.

Art. XI. *Voyage dans les Quatre Principales Iles des Mers d'Afrique, fait par ordre du Gouvernement, pendant les années neuf et dix de la Republique* (1801 *et* 1802,) *avec l'Histoire de la Traversée du Capitaine Baudin, jusqu'au Port-Louis de l'Ile Maurice,* Par J. B. G. M. Bory de St. Vincent, Officier de'Etat-Major; Naturaliste en chef sur la Corvette *le Naturaliste,* dans l'Expedition de Découvertes, commandée par le Capitaine Baudin. Avec une collection de 58 Planches, grand en 4to, dessinés sur les lieux par l'Auteur, et gravées en taille-douce. 3 tomes en 8vo. A Paris. An XIII. (1804.)

A TRAVELLER who 'compasses sea and land' that he may sleep on the top of a burning mountain, and singe his great coat on the brink of a crater, may be allowed to dispense with the ordinary formalities of writing. M. Bory, accordingly, takes an early opportunity of asserting his privilege, and boldly inverts the vulgar relationship of book and title-page. The customary office of the latter, it is pretty generally known, is to announce the

the subject of the former. But, in the present instance, by one of those simple and beautiful expedients which bespeak true genius, he has contrived to render all the subsequent pages of the work subservient to the explanation of the first, and thus to keep alive the curiosity and attention of the reader to the very end of his performance. Ladies and country gentlemen have not the names of 'the four principal islands of the African seas' always ready at a call: and even we hoary critics, who recollect to have read in our gazetteers and other oracles of geographical intelligence, that Madagascar is one of the foresaid principal islands, have been fairly at fault in our conjectures concerning this mysterious title. A diligent perusal of the whole narrative, however, warrants us to assert with certainty, that our naturalist never touched at Madagascar, and to conjecture that Teneriffe, the Isles of France and Bourbon, and our own little rock of St. Helena, are *probably* the islands in question.

To denominate the same place by the same combination of vowels and consonants, is a practice, no doubt, which has the apology of vulgar example; but it argues in our apprehension, great poverty of taste in the writer, and is apt to fatigue the reader, by the tameness and monotony of the repetition. Hence, the compounder of these volumes dexterously rings the changes on the *Isle of France* and *Maurice*, and on *Bourbon*, *Mascareigne*, and the *Isle of Reunion*.

The extraordinary length of the author's own name, and his laudable spirit of enterprise, naturally prompted our curiosity to learn some particulars of his history. These, however, he deals out when and where he pleases. Thus, we find some general notices of his early life and conversation, at page 190th of the third volume, forming an agreeable relief to a long Latin catalogue of plants, and dreary descriptions of volcanic dross.

'Educated,' says he, 'for the sciences, by a well informed and very prudent parent, the revolution soon dragged me from those peaceful occupations for which he formed me. Forced into the army, because I had attained the marching age, I became a soldier. The greatest obligation which I owe to the education which was bestowed on me is a certain degree of philosophy, which has always enabled me, as the old adage expresses it, *to take courage against fortune*. When fairly placed in the ranks, and convinced that I neither could nor ought to quit them, I struggled with all my might for favourable distinction, that I might no longer be blended with the crowd.'

We may observe, in passing, that we do not perfectly comprehend the consistency of this narrative. M. Bory neither *could* nor *should* quit the ranks: yet he makes every effort to quit them, and *succeeds*.

'When

'When the expedition of discovery sailed from France, the prospect of approaching peace induced me to convert to my profit and instruction the years of tranquillity which, I then presumed, could not be very numerous. I had the assurance of the minister, that on my return, I should be permitted to rejoin the army, on producing a certificate that I had not quitted the expedition; and that my time should be counted as service at sea.'

Notwithstanding the eagerness with which he had solicited to be a member of the expedition, it is certain that our author quitted his associates in the midst of their perils, accepted of some secret mission from General Magallon to the French government, and returned home in a neutral vessel. He has not condescended to inform us how he was received at the court of Napoleon; nor whether he still perseveres in his adventurous scheme of visiting Madagascar, India, the Asiatic Islands, and the heart of Africa, (into which he is determined to penetrate, or die,) 'when France shall have compelled her enemies to grant her a long and glorious peace.'

For other biographical particulars, we must turn to the commencement of the first volume, where we find him, under the designation of *chief zoologist*, expressing his decided passion for voyages and travels, and his entire approbation of the details of an equipment so admirably adapted for the promotion of science. The officers and naturalists with whom he became particularly acquainted at Havre de Grace, and in whose society he was on the eve of exploring foreign countries, were all endued with the requisite talents, professional skill, and perfect urbanity. 'A harmony which time was destined to confirm, soon reigned among us all. I reckon among the most fortunate periods of my life, that in which I formed so many precious connexions.' We know not how M. Bory can reconcile this charming description with the strictures which occur in other parts of his relation, particularly with the want of scientific books, the alleged incapacity and misconduct of his commander, and the insignificance of *Petitin*, a nominal secretary, who deprived Depuch, the mineralogist, of a comfortable bed.

Among the thirty-three persons, who composed the staff of the two corvettes, and who are celebrated as paragons of perfection, we distinguish few of name. M. Michaux, indeed, the author of travels in Persia and in North America, was on board the Naturaliste, though only as a passenger. We are sorry that we have not the honour of being acquainted with M. Peron, who embarked in the capacity of *anthropologist* to the expedition, and who, being specially charged with the 'study of man,' ranks at the *tail* of the *zoologists*. For the honour of human nature, we trust that M. Peron will assert his claims to stand higher on the

Etat

Etat-Major, by publishing a few quartos on the anthropology of the Isles of France and Bourbon.

But, to return to the hero of our present lucubrations, it is worthy of remark, that, after duly commemorating the complete appointment of the expedition, he bitterly deplores the paucity and injudicious selection of books. This, again, rather startles us: for, in his preface, he seems to hold books very cheap, and talks of the 'luxury of quotation,' as suitable only to works of a very different description from his own. We greatly respect his motto, *j'ai vu;* but few naturalists, zoologists in chief though they be, will do much justice to themselves, or their publications, without consulting the writings of others, especially of the systematists. Indeed, after all this gentleman's high pretensions to independence, we conceive that he is materially beholden to various tomes of nomenclature and description; and his performance would have acquired a more pleasing variety, and additional interest, from more extensive reading, both on the principal and collateral matters which he has condescended to discuss. A mind gifted with more than ordinary activity, and equally ready to combat armies, or hunt butterflies, may, unquestionably, achieve much in virtue of its own energies; but no talents, or versatility of disposition, can justify a total disregard of those writers who have preceded us in any department of inquiry. Whether their notices may supply useful hints, or lie open to animadversion, they have claims on our attention; and the public expect that we should be equally disposed to profit by their information, and to correct their mistakes.

During the two or three first nights of the passage to Teneriffe, M. Bory became sentimental, and slept ill; not, however, from sea-sickness, but from thinking of his dear country. To compensate for this 'moral situation, which was truly afflicting,' he enjoyed, during the day, 'a most voracious appetite.' Nor is this the only occasion on which we find a violent desire for food conjoined with delicate emotions and the enthusiasm of science. The exalted company of Peron, the anthropologist, and Bernier, the astronomer, appears not to have repressed the solvent virtues of the gastric juice. 'When we returned to town,' says the journalist, (vol. I. p. 22.) 'we had a furious appetite.' And sorry we are to add, that, for the sum of five livres, these sons of science could only procure a dinner, which would hardly be tolerated, even at the frugal board of a Scotish reviewer. Again, the enchanting lectures of Broussonnet on the beautiful productions of the forest of Laguna, were instantly deserted, when the voice of Monsieur Legros summoned the audience to a comfortable meal. The narrative, moreover, sets forth, (I. 64.) that 'this dinner

dinner was well received, but better devoured; and such was our appetite, that it was not till we had made a wide breach in the repast, that we missed Michaux, whose zeal had drawn him to a distance. He was not seen again till evening, when he returned to Laguna late, and *fasting*.' Alas! poor Michaux!

The appearance of a broken mast floating on the waves, made little impression on any of the crew except on the susceptible heart of M. Bory. His sorrowful reflections, however, 'fortunately vanished with the object which suggested them.' On the 8th of Brumaire, his journal reminded him, that it was exactly a month since he had taken leave of Paris, and every thing that he held dear. He therefore exclaims, 'When will it be three years?' Yet, on the whole, we are happy to learn, that his mind was tolerably tranquil during a run of fourteen days from Havre to Teneriffe, though his head, to be sure, was somewhat embarrassed; and he felt less inclined to active pursuits, than in the subsequent stages of the voyage. 'My departure, he adds, 'had not affected me with a lively sorrow, nor did my arrival inspire me with excessive joy. They who know me will be surprised at this; for I am by no means indifferent, or insensible.' Such is the writer who quotes with approbation *le Je est haïssable*, and who, from his declared antipathy to *egotism*, had been strongly tempted to suppress the publicatoin of his voyage.

The account of Teneriffe with which we are here presented, is, in some measure, eked out by extracts from, or references to a former work, entitled, 'Essays on the Fortunate Islands.' We confess, however, that we did not expect to find the following flippant remark among the reprinted passages.

'In general, the most wealthy inhabitants of the port have adopted several English fashions; yet the men dress like the French, because they are convinced that taste is inseparable from our nation; and in this respect they have done us more justice than Mr. Cooke. This navigator never allows an opportunity of criticising us to escape him. We read, in his third voyage, that *the inhabitants of St. Croix are sufficiently decent, if we except their dress*, which is that of the French. Had any person but Mr. Cooke penned this sentence, it would be reckoned at least inapplicable. But the time is not yet arrived, and the British navigator still passes for infallible. Yet, certainly, if it be ridiculous to follow the fashions of Paris, London is more obnoxious to the imputation than all the world beside.'

From such a pitiful trait of nationality, we pass to M. Broussonnet, member of the Institute, who resided on the island as agent of commercial relations, and who is advantageously known by his proficiency in different departments of natural history. Should this gentleman ever complete his intended Flora Canarien-

sis,

sis, he will contribute not a little to the promotion of botanical science. Meanwhile, the first volume of the present voyage will be found to contain some interesting and novel particulars relative to the indigenous vegetation of Teneriffe. Several rare plants, as *Saccharum Teneriffæ*, *Semper vivum Canariense*, *Lobelia Broussonetia*, &c. are particularly mentioned; and we are agreeably surprised to find some of the humbler tribes introduced in the course of the following important remark.

'The cryptogamy of the forest of Laguna is not less rich. It is a prejudice to suppose, that the timid plants of this class are more appropriate to cold countries, and that few of them are to be found in hot climates. We shall have occasion to observe, that in the Isles of France and Bourbon, which are situated in the Torrid Zone, mosses and ferns are the fairest portion of Flora's domain. We shall mention here, as belonging to Teneriffe, *Blechnum radicans*, which should constitute a separate genus, *Trichomanes Canariensis*, a beautiful fern peculiar to the Fortunate Islands, *Asplenium adianthum nigrum*, *A. latifolium*, *A. hæmionitis*, *A. trichomanes*, two or three species of Pteris unknown to our climates, a new *Polypodium*, several European mosses, two non-descript *Hypna*.' &c.

Although the naturalists remained eleven days on the island, and the weather was extremely favourable for scaling the Peak, the commander seems to have interfered in preventing the attempt. Something of an awful mystery, however, is mingled with the regrets expressed at the disappointment.

The ichthyologist may derive entertainment and some instruction from the notices of different species of fish which occurred to M. Bory's observation as he proceeded southward. His remarks on the luminous appearance of the sea in the night, though they present little that is new, are likewise deserving of perusal. After exposing them with some degree of affectation and complacency, he pretends that he only states facts and doubts, and leaves it to the learned to draw conclusions. Yet we shall afterwards find him boldly theorizing on subjects of greater magnitude, and more remote from the sphere of human intellect.

From sharks, molluscæ, flying fish, &c. we return to the leader of the expedition, who certainly does not appear in the amiable and interesting relations which we associate with the name of Cooke, a name which the author affects to treat with contempt. When the two corvettes had nearly got entangled by the yards, the commander expressed his displeasure by *throwing his hat on the deck, and giving it* TWO KICKS.

'An able astronomer of the expedition related to me, one day, when we were talking of the commander's apprehensions about the near approach of the vessels, a very singular fact, which officers have since confirmed to me, though confirmation, in this case, be superfluous, as my original

original authority is a man of honour. Having occasion for a magnetic needle, to replace that of an azimuth compass which had been injured, the astronomer applied to the commander, who had several in the drawer of his mahogany bureau. M. Baudin, who happened that day to be in a pleasant humour, entreated him to enter his cabin, and searched for the box of magnetic needles. By the accidental admission of moist air, the steel was somewhat rusted, and the magnetic virtue sensibly impaired. Observing the astronomer's serious disappointment, "What else can you expect, (said the Captain, to comfort him) all the articles provided by Government are shabby beyond description. Had they acted as I could have wished, they would have given us silver instead of steel needles."'

The Captain's journal is afterwards described as an immense and splendid volume, filled with *beautiful drawings* by a sailor lad, and containing nothing else worthy of notice.

After encountering a severe storm, which he very prudently declines painting in the romantic style, and after feeling the unequivocal symptoms of declining health, our jaded navigator and his learned associates arrived at the Isle of France. Here they were strictly scrutinized at the health office, in consequence of the ravages which the small-pox had made among the islanders. These colonists resist the introduction of variolous and vaccine inoculation with unaccountable obstinacy.

In the then distracted state of the settlement, the expedition was at first received with coldness and ambiguity: nay, it was even suspected, that, under the cover of a scientific voyage, was concealed the design of chastising the recent disaffection of the greater part of the inhabitants. We impute no such intention to the members of the expedition, or to their employers: at the same time, from various hints and circumstances, we are warranted to surmise, that something more than the advancement of physical knowledge was included in the secret plans of the enterprise. We no where find a copy of the instructions; M. Bory is reserved with respect to the particular objects of this ostentatious equipment; and his book promises to be the only result which the public have to expect from a roaming college of the arts and sciences.

A few remarks relative to the Isle of France, are accompanied with strictures on the haughty and interested deportment of the commander, and on some evident symptoms of the disorganization of the party. The author, in a reduced state of health, and much irritated at the conduct of his superior, takes leave of his brethren at the harbour, retires into the country, and finds sentimental consolation in contemplating the plains of Willems, and in wandering, as a botanist, over hill and dale. His speculations

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on volcanoes, and on the organic remains of former times, suggest some obvious and pertinent geological reflections, which, however, he spins out into ludicrous refinement. We admit, that while vestiges of frail leaves and insects are visible on calcareous and schistose strata, no such traces are found of the lord of the creation. But who would believe that this fact gave rise to the pyramids of Egypt? 'The pyramids are, perhaps, the work of a people as much advanced in the sciences as ourselves, and who were mortified not to find, in any calcareous substance, convincing proofs of the antiquity of our species.' In all probability, the founders of the pyramids never inquired if a human femur or tibia had been detected in a lime-quarry.

Our *sentimental* traveller appears to have derived much amusement from the *hunting of apes*, though even his redoubtable appetite shrunk from the flesh of those lovely creatures, from the conviction that a roasted ape must resemble a *roasted child*. A reason not less satisfactory is added, namely, that apes' flesh is a detestable morsel.

From the pleasures of the chase, and the prosecution of his botanical pursuits, M. Bory was suddenly diverted by the appearance of Commodore Elphinstone's squadron. General Magallon, who seems to have treated him with more marked attention than Captain Baudin, not only accepted his offer of military service, but attached him to his staff. With all the versatility and national vanity which characterize his countrymen, the naturalist exchanged his herborizing box for a knapsack, and expected to see the English 'reap only disgrace.' On the disappearance of the Commodore, however, he undertook a commission for General Magallon, to be executed in the Isle of Bourbon.

Although the account of this last mentioned island forms the most extended, and, perhaps, the most interesting portion of the work, our readers will pardon us if we forbear to dilate on its contents. Even an abridged view of the various qualities and configurations of the volcanic products, which are here recorded, would greatly exceed our limits, without being very intelligible to any but professed *Plutonists*, while their forms and fashions are incident to such sudden and frequent changes, that different dispositions may present themselves to the next adventurous traveller. Some of the best descriptions, too, admit not of compression, and others will be better understood by comparing them with the plates. If, on many occasions, the descriptions of particular portions of lava appear to be heavy and superfluously minute, we must nevertheless acknowledge, that they form a valuable supplement to the writings of those geologists who have most accurately examined volcanic countries. They likewise demonstrate,

monstrate, that the four islands in question have been formed by the agency of subterraneous fire; that the immense tracts of basalt and trap which occurred to the author's observation, are decidedly of igneous formation; and that the columnar ranges do not assume their prismatic character, as has been generally supposed, from their fused materials coming into contact with the sea. These are important facts, which have been seldom placed in a more luminous point of view. But for the details which so copiously illustrate them, we must refer to the work. The physical map of this volcanic island appears to be executed with much care and diligence; and the exhibitions of basaltic columns in vertical, horizontal, inclined, and curved directions, are strikingly delineated in the plates.

M. Hubert's experiments relative to the increased temperature of the spadix of *Arum cordifolium*, during the impregnating process, will arrest the attention of the botanical reader. We shall notice only a few of the results. Five of these spadices, which had unfolded during the night, being applied at sun-rise to the tube of a thermometer, elevated the mercury from 19 to 44. At eight o'clock, the standard thermometer marked 21, and that employed in the experiment 42. The heat of the spadices gradually diminishing, at length indicated only seven degrees of difference. The same trials, seven or eight times repeated, gave the same results. The maximum of temperature produced by entire spadices, was 49½. According to different degrees of mutilation, the maximum varied from 37 to 42. The contact of atmospheric air, though not of light, is necessary to the developement of this vegetable heat, which seems to be confined to the outer surface of the spadix. From the observations of M. Lamark on *Arum Italicum*, and those of the author on *Arum esculentum*, it is manifest, that this singular property of giving out heat is not peculiar to one species of the genus. M. Bory even suspects that it may belong to most vegetables in a greater or less degree.

The frequent occurrence of detached descriptions of natural productions will be apt to repel ordinary readers from the perusal of these volumes. Yet painting of a higher cast, and views of large and striking portions of scenery sometimes animate and embellish the monotonous air of the work. From several passages which might be quoted in confirmation of this remark, we select the following on account of its brevity.

'When arrived at the top of the Piton Rouge, we enjoyed a most august and solemn spectacle. Behind us, the calm sea and serene sky were blended in the distance. On our right, rose the Piton Rond, exhibiting a truncated aspect towards the sea. Before us a mountain shot

aloft in majesty, and concealed the sun, which still shone on the other side of the island. Over its dark and wooded ridge, were scattered elevations resembling unequal waves. On the left, lies the vast volcanic district, whose sombre and fuliginous aspect fills the mind with gloom. A huge dome of surprising regularity, surmounted by a prominent truncation, crowns and commands the prospect. This dome is the furnace of the volcano, or vent, by which the subterranean fires seem to communicate with those of heaven. Its enormous sides are marked by shades of a more livid hue and metallic tints. Those are extinct currents of a yellow, greyish, or bronze colour, which had forced a passage through the scorious crust of the volcano.

'But when night had wrapped these silent abodes in the thickest shades, a new species of horror fixed us in admiration. The crested summits and the mass of mountains were still depicted under a dark sky. The crater of the furnace exhaled a column of blazing smoke, which was dissipated in the air, but coloured with fire some clouds which floated in the highest regions of the atmosphere. Amid distant and confused peaks, lightened by a bloody gleam, a burning river, whose source was concealed from view, slowly conveyed its glowing waves over a black soil, rendered still more dark and dismal by the glare of the liquid lava.'

We are likewise pleased with our indefatigable journalist, when he traces the progress of former eruptions, and calculates the quantity of incandescent and fluid matter ejected at particular periods. We applaud that dauntless perseverance which physical obstacles and friendly remonstrance could not shake, and which conducted the adventurer to the summit of a volcano, which has been seldom contemplated by scientific eyes, and which we are now enabled to compare and contrast with Etna, Vesuvius, and Hecla. At the same time, we must confess, that we have more frequently yawned over relations of cheerless solitude, and 'stumbled on the dark mountains,' than felt ourselves carried along the diversified route with smoothness or enthusiasm. Nor must we dissemble, that, in the course of our arduous and painful peregrinations, an extravagant fancy has sometimes crossed our path. We have alluded above to the author's extravagant theory of the foundation of the pyramids; and we have now to be informed of the origin of the *fiery dragon*. Near the top of the volcano, the various streams and streamlets of lava have assumed multiplied and fantastic configurations, exhibiting coarse representations of cables and brains, snails and intestines, rolls of wet linen and tortoises, turbans and large concentric cakes, &c. Frequently they shoot into long projections, with palmated extremities, and a scaly incrustation.

'But one of their most ordinary and complete similitudes, is that of the sinuous tails of monstrous serpents, &c. In fact, the manner in which the dragon has been described, would tempt us to believe, that this emblem,

blem, so little understood, was neither more nor less than that of volcanoes.'

Delighted with this happy conjecture, our traveller fondly pursues it through all the windings of the monster's tail, and appeals, with ludicrous confidence, to the mythology of the Chinese and Egyptians, of the Greeks and Peruvians. Again, the livery of demons and furies is thus accounted for.

'Black and red are, on our theatres, in our pictures, and in the writings of our poets, the appropriate colours of demons and furies. This idea is mythological, and is certainly borrowed from Italy: for Italy, filled with volcanoes, so much resembled the abodes of the infernal deities, that we have every reason to believe, that these burning mountains have been assumed as the prototype in *the religions which recognize a hell.*'

To return from the regions of fiction, it is worthy of remark, that Bourbon is obnoxious to more frequent eruptions than any one of the European volcanoes. Since the discovery of the island, its craters, in constant activity, have never ceased to harass the inhabitants. M. Hubert, who has attentively watched the volcano since 1785, assures us, that this mountain has discharged lava at least twice every year; and that eight of its fiery streams continued their progress to the sea.

At page 388 of volume second, it is stated on the joint testimony of the author, and the accurate M. Hubert, that, in very calm weather, the flexible leaves of the palm trees, viewed over a large extent of ground, have a perceptible direction to the centre of the island, attracted, as it is conjectured, by the mountainous regions. We could wish, however, to see this singular assertion more distinctly verified.

Few studies, it will be readily admitted, have a more direct tendency to expand the mind, and to generalize its ideas, than that of natural history. In contemplating those astonishing operations which are daily taking place on the grand theatre of the physical world,—in speculating on the production and the ruin of islands and continents—in meditating on the countless generations of organized beings, which pass away and are forgotten in the lapse of ages, we smile at the petty passions and prejudices of individuals, who breathe their little hour, and are so soon to give place to others. Such striking considerations are powerfully calculated to annihilate the spirit of party, and the animosities of nations. It is therefore with peculiar regret that we are compelled to advert to the *nationality* of Messieurs Bory and Hubert. We have already given a sample or two of 'the sin which most easily besets' their countrymen; and if we can make room for it, we may, perhaps, adduce a notable instance of that figure of speech

speech termed *gasconade*. In the mean time, these strictures were suggested by the following extract of a letter from Hubert. Though his friend's *modesty* has banished it to the margin, it is not, on that account, the less precious.

'I was really anxious about you, my dear friend; for I was apprized of your determination to scale the volcano on the side next the sea. I can scarcely believe what I heard concerning the accomplishment of such a design; but your letter has convinced me, no less than the relation of your man, George, who especially remembers, that you continued a whole day without drinking, and two days with scarcely any food. I pity the servants of such enthusiastic naturalists as you. In fact, you travel as *the French make war. I mean like those who are deterred by no obstacle, and who banish the word* IMPOSSIBLE *from their language.*'

A little farther on, we are treated with an animated account of the process of world-making *à la Française*. This luminous hypothesis blazes over many pages; but its import may be conjectured from this single, though pompous and eventful paragraph.

'Let it be granted, that the planets and their satellites are the result of a premeditated design to organize additional worlds; or that, abandoned to the general laws impressed on the elements, the principles destined to compose the totality of their masses, had, in the lapse of time, and according to those laws, sufficed to effect the creation, of which we form a part, we may then propound the following hypothesis. To determine the birth of planets fated to exist, a heavenly body precipitated into the sun, detached masses from it, or in consequence of breaking, its own fragments, impelled nearly in the same plane, and projected by such a violent impulse, formed in space the nuclei of the globes of our system.'

Though we should concede to the framer of this hypothesis, or rather to his celebrated precursor the Count de Buffon, this gratuitous concourse of heavenly bodies, this frittering of a large world into so many small ones, what do we gain? If we remove the difficulty which attends every attempt to explain the formation of a planet one step, we adopt a very clumsy and disorderly mode of multiplying the objects of creation, without increasing the quantity of matter already existing. The production of the sun itself, and of the comet destined to impinge on its mass, is just as mysterious as ever. That the several fragments dispersed in space, should be in a high state of *ignition*, and that the central fires of our globe are gradually augmenting, are positions by no means proved. On the contrary, the sun, so far from being an immense world of conflagration, is, probably, opaque and habitable, and merely surrounded by a luminous atmosphere, so that fragments driven off from its substance might perform

perform their march with the utmost *coolness*. That the interior of our globe is replete with combustion, is a mere assumption; and, if proved, the increase of such combustion is not warranted by fact. But it is really wasting time to confute this *réchauffé* of a theory, which, like others, has had its day, and which, with the thinking part of mankind, has had a place assigned to it among the numerous monuments of human ignorance and presumption.

The infrequency of earthquakes and of thermal waters in a country so decidedly volcanic as the isle of Bourbon, is mentioned as matter of surprise. We feel some hesitation in acceding to the opinion, that earthquakes are most frequent and violent about the commencement and extinction of volcanic combustion; but it is impossible to object to the reason alleged for the paucity of mineral waters, viz. the scarcity of springs of any description.

The first vegetation of a new soil, remote from continents and the intercourse of man, is a botanical problem of difficult solution. The present writer objects, with much plausibility, to the received notions of winds, water, and birds, conveying an adequate and sufficiently varied supply of seeds in a state fit for germination. But his hypothesis of *temporary* and *partial* acts of creation, adapted to *existing circumstances*, is, according to our conceptions, unphilosophical, and by no means countenanced by fact. What, we would ask, have these supplementary acts effected for the island of Ascension, a volcanic ejection of comparatively recent date? 'Its immense distance from land,' observes the late Dr. Walker, 'renders its acquisition of seeds difficult and precarious. I know but of two ways of supplying it with seeds, one by the water of the ocean, the other by birds. By one or other of these ways, it has got possession of three species of plants, and only three, a singularity no where else known.' Many existing islands are, probably, only portions of continents, and received their quotas of vegetable germs in periods of high antiquity. Others, which owe their present appearance to the agency of subterraneous fires, may have previously existed at no great depth under the surface of the sea, and in such a state as to preserve the rudiments of future plants from the contact of air or other causes of corruption. Amid the physical convulsions which may have agitated various tracts of the earth's surface, some of the many sources of vegetable reproduction may have been kept alive, while the fortuitous movements of wind, water, and birds, may have also contributed their aid. In reasoning, however, on such a subject, we may truly say, that 'we are of yesterday,' and that 'we know nothing.' History, eager to keep pace with the busy, but fleeting events, which harass

harass the successive generations of rude and of civilized society, presumes to disdain the silent yet majestic march of nature, who steadily observes her course, heedless of the clamours of contending factions, and of the miseries which man inflicts on his brother. And thus, since the days of Theophrastus till those of Linnæus, the flower which has not ceased with the return of spring, to disclose its beauty, or dispense its fragrance, and the more homely herb, which has continued to minister to the shelter or sustenance of animated beings, have, as subjects of inquiry, been condemned to peculiar neglect. The affinities and migrations of the vegetable families, in the early and subsequent ages of the world, it is now impossible, from want of proper documents, to ascertain. Either they never found a place in the registers of man, or, if they did, their history has for ever perished. What given tract of land can, at this day, exhibit the uninterrupted genealogy of its vegetable tribes? Impressions of races, long since extinct in the colder latitudes, are still visible in various strata of schistus, coal, and iron stone. Their prototypes have, perhaps, perished, or, perhaps, they exist in Africa or Indostan. These remarks, by the way, would lead us to infer, in opposition to the author's sentiments, that the heat of our planet is gradually diminishing.

The nonage of creation, if we may so speak, is a favourite notion which M. Bory endeavours to confirm, by the varying aspects of some plants, and the former existence of the shapeless *dronte*. These, he would persuade us, are the first essays of creation, and not yet reduced to their permanent and specific distinctions. But why suppose that the very first act of creation is less perfect than any subsequent one? Why not perceive, that, in every country, there are hybrid and accidental varieties, which belong not strictly to any species noted in a scientific nomenclature? or, why not discern that our most accurate distinctions often insensibly glide into one another, and that nature smiles at our artificial arrangements?

We have to remark, however, that the botanical research manifested in these volumes, is highly creditable to the author's diligence. Besides various rare and nondescript plants, he has carefully noted those kinds which are also indigenous to Europe. Among these last, we notice several cryptogamics, as *Equisetum hyemale*, *Lycopodium clavatum*, *L. denticulatum*, *Pteris aquilina*, *Asplenium adiantum nigrum*, *Polypodium aculeatum*, *Adiantum capillus veneris*, *Trichomanes tunbrigense*, *Sphagnum cymbyfolium*, *Polytrichum commune*, *Bryum alpinum*, *B. striatum*, about twenty *Lichens*, four *Conferva*, with various *Fuci* and marine *Ulvæ*. The descriptions of plants in the margin are generally distinct

and

and elegant; and several of the more striking species are figured in the plates. It is, moreover, intimated, that the collections of dried specimens are varied and abundant, and that their contents will shortly receive illustration from the pens of professed botanists.

We cannot close our account of the physical information contained in this performance, without noticing the despised fragments of an atmospheric stone, which had alighted on the *Isle aux Tonnetiers*, a short time before the arrival of the expedition. We certainly could have wished that the circumstances of its fall had been more minutely stated. At the same time, we are fully disposed to believe in its celestial origin, at least more so than in M. Bory's theory of the general phenomenon, a theory which emulates the oak of the Latin poets, and knows no limits but heaven and hell. With professions of much deference to the hypothesis of La Place, which ascribes these *outlandish* stones to the projecting force of lunar volcanoes, M. Bory very modestly states his own doctrine in several pages. From these, it appears, that in ancient times, ignivomous mountains were endued with mighty force, though like the race of mortals in Homer's day, they have sadly degenerated from their ancestors. Without staying to examine the causes of this deplorable degradation, or to reduce to consistency, the expiring energies of volcanic projection, with the accumulating intensity of the central heat; it appears not at all improbable, to our fiery champion, that from the said mountains, masses of matter were propelled from an immense depth, to such a height, as to perform spiral circumgirations, somewhere within the limits of our planetary system, till, in the course of ages, they came to pop down, and take their rest on the surface of mother earth.

But, as 'such knowledge is too wonderful for us,' as 'it is high,' and 'we cannot attain to it,' we willingly pass to '*one of those historic meteors*,' to 'one of those brilliant moments in the annals of every people, moments which vanish with the authors of their splendour.' The establishment of a line of naval stations from the Cape of Good Hope to Ceylon, including the isles of France, Bourbon, and Madagascar, with the relinquishment of the French territorial possessions on the continent of India, are pompously held out as the infallible means of crushing the overgrown power of Great Britain in the east, and thus striking at her very vitals!

At St. Helena, this bold speculator was not permitted to explore the natural productions of the island. He seems, therefore, to have considered himself as particularly called upon to make

make the governor and his guests the subject of his observations.

'The governor was a man of sixty years of age, thin and ruddy, with a full-bottomed wig, highly powdered and curled, like that of Quipotis, which gave him a very comical air. He addressed several sentences to us, which no doubt were very polite; and he prevailed on us to go up stairs, and partake of the repast. As I did not well understand what he said, his aid-de-camp told me in a jargon hardly intelligible, that *the governor had been speaking French to me.*

'At a moment when France had just compelled Europe to grant her a glorious peace, but had yet scarcely breathed from those revolutionary commotions which had tarnished her reputation in the eyes of her enemies, I knew not well what countenance to assume among men who the least regard us. I was desirous to appear neither humble nor haughty: and yet to maintain a character among those who believe they have one, and who judge of every thing by appearances. Though I suspected that my acceptance of the governor's obliging invitation might be reckoned unseasonable, I was nevertheless curious to see the English at one of their great dinners. My companions freed me from this dilemma. They mounted; and I followed.'

The governor's party consisted of forty persons! With the exception of his two daughters, one of whom seems to have half captivated our *combustible* journalist, the circumstance of the entertainment are described with more sarcasm than pleasantry. *Two hundred* crystal bottles of wine, of which poor M. Bory was *compelled* to drink liberally, though he gave the go-by to a multitude of toasts flourished in the fore-ground of the dessert; and we are left to infer, that British hilarity and inebriety are synonymous terms.

'As it was whispered at table, that I belonged to General Magallon's staff, two tall gentlemen came near me; and one of them, a Colonel of Engineers, who spoke passable French began to converse with me. He asked me a multitude of questions concerning the isles of France and Bourbon, their resources, their population, and the means of their defence. I was almost tempted to treat him in the *English style*, by *exaggerating* on every topic of his inquiries. However, I gave him such answers as I thought proper, and conformable to truth. The other gentleman, who had been silent for an hour, then took his turn of the conversation, and, after having again interrogated me, informed me that he was Commodore Elphingstone.

'Commodore Elphingstone enjoys a certain degree of reputation in the English Navy, and had served, it seems, with distinction in India. On receiving accounts of the peace, he had left his ship, and taken his passage for England on board an Indiaman. The Commodore had frequently cruised before the isle of France. He had a high opinion of the talents of General Magallon; and he told me, that had not the peace

peace taken place, his government had projected an attack on the Mauritius. He added too, that he was to have directed the execution of it. As he talked to me of all the formidable resources which would have been employed, I told him with politeness, that had the attack taken place, I should have been glad that it should have been conducted by him, because his good offices to the prisoners whom he had frequently taken, had secured him the affection of many people. The Commodore, interpreting my words quite differently from what I meant, thanked me heartily, and, after having frequently repeated, *you are too polite*, he added, *Indeed after the reduction of the island, I should have done all in my power to have secured good treatment to every body.* Here I stopped him short. "Commodore," said I to him, "you have misunderstood me; my only reason for wishing you should attack us rather than another, is, that the governor might have it in his power to return to you, when a prisoner, all the civilities which you have shown to the seamen whom you have taken on different occasions." On this the conversation broke off. My two Englishmen turned their backs on me, and have never seen me since.'

M. Bory may thank his stars that the separation was followed by no *ignivomous explosions:* and, on taking leave of him, in our turn, we have only to observe, that, with all his talents and acquired information, with all his readiness to engage in bustling or in plodding occupations, and with all his facility in composition, we hope he is still *young*, and are afraid he will always be a *Frenchman*.

Art. XII. *Memoires d'un Temoin de la Revolution; ou Journal des faits qui se sont passé sous ses yeux, et qui ont preparé et fixé la Constitution Française.* Ouvrage Posthume de Jean Sylvain Bailly, Premier President de l'Assemblée Nationale Constituant, Premier Maire de Paris, et Membre des Trois Academies 8vo. 3 Tom. Paris, 1804.

AMONG the many evils which the French revolution has inflicted on mankind, the most deplorable, perhaps, both in point of extent and of probable duration, consists in the injury which it has done to the cause of rational freedom, and the discredit in which it has involved the principles of political philosophy. The warnings which may be derived from the misfortunes of that country, and the lessons which may still be read in the tragical consequences of her temerity, are memorable, no doubt, and important: but they are such as are presented to us by the history of every period of the world; and the emotions by which they have been impressed, are in this case too violent to

to let their import and application be properly distinguished. From the miscarriage of a scheme of frantic innovation, we have conceived an unreasonable and undiscriminating dread of all alteration or reform. The bad success of an attempt to make government perfect, has reconciled us to imperfections that might easily be removed; and the miserable consequences of treating every thing as prejudice and injustice, which could not be reconciled to a system of fantastic equality, has given strength to prejudices, and sanction to abuses, which were gradually wearing away before the progress of reason and philosophy. The French revolution has thrown us back half a century in the course of political improvement; and driven us to cling once more, with superstitious terror, at the feet of those idols from which we had been nearly reclaimed by the lessons of a milder philosophy. When we look round on the wreck and the ruin which the whirlwind had scattered over the prospect before us, we tremble at the rising gale, and shrink even from the wholesome air that stirs the figleaf on our porch. Terrified and disgusted with the brawls and midnight murders which proceed from intoxication, we are almost inclined to deny ourselves the pleasures of a generous hospitality; and scarcely venture to diffuse the comforts of light or of warmth in our dwellings, when we turn our eyes on the devastation which the flames have committed around us.

The same circumstances which have thus led us to confound what is salutary with what is pernicious in our establishments, have also perverted our judgments as to the characters of those who were connected with these memorable occurrences. The tide of popular favour, which ran at one time with a dangerous and headlong violence to the side of innovation and political experiment, has now set, perhaps too strongly, in an opposite direction; and the same misguiding passions that placed factious and selfish men on a level with patriots and heroes, has now ranked the blameless and the enlightened in the herd of murderers and madmen.

There are two classes of men, in particular, to whom it appears to us that the revolution has thus done injustice, and who have been made to share, in some measure, the infamy of its most detestable agents, in consequence of venial errors, and in spite of extraordinary merits. There are none indeed who made a figure in its more advanced stages, that may not be left, without any great breach of charity, to the vengeance of public opinion: and both the descriptions of persons to whom we have alluded only existed, accordingly, at the period of its commencement. These were the philosophers or speculative men who inculcated

culcated a love of liberty and a desire of reform by their writings and conversation; and the virtuous and moderate, who attempted to *act* upon these principles at the outset of the revolution, and countenanced or suggested those measures by which the ancient frame of the government was eventually dissolved. To confound either of these classes of men with the monsters by whom they were succeeded, it would be necessary to forget that they were in reality their most strenuous opponents, and their earliest victims. If they were instrumental in conjuring up the tempest, we may at least presume that their cooperation was granted in ignorance, since they were the first to fall before it; and can scarcely be supposed to have either foreseen or intended those consequences in which their own ruin was so inevitably involved. That they are chargeable with imprudence and with presumption, may be affirmed, perhaps, without fear of contradiction; though, with regard to many of them, it would be no easy task, perhaps, to point out by what conduct they could have avoided such an imputation; and this charge, it is manifest, ought at any rate to be kept carefully separate from that of guilt or atrocity. Benevolent intentions, though alloyed by vanity, and misguided by ignorance, can never become the objects of the highest moral reprobation; and enthusiasm itself, though it does the work of the demons, ought still to be distinguished from treachery or malice. The knightly adventurer, who broke the chains of the galley slaves purely that they might enjoy their deliverance from bondage, will always be regarded with other feelings than the robber who freed them to recruit the ranks of his banditti.

We have examined in a former article * the extent of the participation which can be fairly imputed to the *philosophers* in the crimes and miseries of the revolution, and endeavoured to ascertain in how far they may be said to have made themselves responsible for its consequences, or to have deserved censure for their exertions: and acquitting the greater part of any mischievous intention, we found reason, upon that occasion, to conclude that there was nothing in the conduct of the majority which should expose them to blame, or deprive them of the credit which they would have certainly enjoyed, but for consequences which they could not foresee. For those, who with intentions equally blameless, attempted to carry into execution the projects which had been suggested by the others, and actually engaged in measures which could not fail to terminate in important changes, it will not be easy, we are afraid, to make so satisfactory an apology. What is written may be corrected; but what is done cannot be recalled:

* Vol. I. p. 9, 10, &c.

a rash and injudicious publication naturally calls forth an host of answers; and where the subject of discussion is such as excites a very powerful interest, the cause of truth is not always least effectually served by her opponents. But the errors of cabinets and of legislatures have other consequences and other confutations. They are answered by insurrections, and confuted by conspiracies; a paradox which might have been maintained by an author, without any other loss than that of a little leisure, and ink, and paper, can only be supported by a minister at the expense of the lives and the liberties of a nation. It is evident, therefore, that the precipitation of a legislator can never admit of the same excuse with that of a speculative inquirer; that the same confidence in his opinions, which justifies the former in maintaining them to the world, will never justify the other in suspending the happiness of his country on the issue of their truth; and that he, in particular, subjects himself to a tremendous responsibility, who voluntarily takes upon himself the new-modelling of an ancient constitution.

We are very much inclined to do justice to the virtuous and enlightened men who abounded in the constituent assembly of France. We believe that the motives of many of them were pure, and their patriotism unaffected: their talents are still more indisputable; but we cannot acquit them of blameable presumption and inexcusable imprudence. There are *three* points, it appears to us, in particular, in which they were bound to have foreseen the consequences of their proceedings.

In the *first* place, the spirit of exasperation, defiance, and intimidation, with which, from the beginning, they carried on their opposition to the schemes of the court, the clergy, and the nobility, appears to us to have been as impolitic with a view to their ultimate success, as it was suspicious perhaps as to their immediate motives. The parade which they made of their popularity; the support which they submitted to receive from the menaces and acclamations of the mob; the joy which they testified at the desertion of the royal armies; and the anomalous military force, of which they patronized the formation in the city of Paris, were so many preparations for actual hostility, and led almost inevitably to that appeal to force, by which all prospect of establishing an equitable government was finally cut off. Sanguine as the patriots of that assembly undoubtedly were, they might still have been able to remember the most obvious and important lesson in the whole volume of history, that the nation which has recourse to arms for the settlement of its internal affairs, necessarily falls under the iron yoke of a military government in the end; and that nothing but the most evident necessity can justify the lovers of freedom

freedom in forcing it from the hands of their governors. In France, there certainly was no such necessity. The whole weight and strength of the nation was bent upon political improvement and reform. There was no possibility of their being ultimately resisted; and the only danger that was to be apprehended was, that their progress would be too rapid. After the States-General were granted, indeed, it appears to us that the victory of the friends to liberty was ascertained. They could not have gone too slow afterwards; they could not have been satisfied with too little. The great object was to exclude the agency of force, and to leave no pretext for an appeal to violence. Nothing could have stood against the force of reason, which ought to have given way; and from a monarch of the character of Louis XVI. there was no reason to apprehend any attempt to regain, by violence, what he had yielded from principles of philanthropy and conviction. The Third Estate would have *grown* into power, instead of usurping it; and would have gradually compressed the other orders into their proper dimensions, instead of displacing them by a violence that could never be forgiven. Even if the orders had deliberated separately, (as it appears to us they ought clearly to have done,) the commons were sure of an ultimate preponderance, and the government of a permanent and incalculable amelioration. Convened in a legislative assembly, and engrossing almost entirely the respect and affections of the whole nation, they would have enjoyed the unlimited liberty of political discussion, and gradually impressed on the government the character of their peculiar principles. By the restoration of the legislative function to the commons of the kingdom, the system was rendered complete, and required only to be put into action, in order to assume all those improvements which necessarily resulted from the increased wealth and intelligence of its representatives.

Of this fair chance of amelioration, the nation was disappointed, chiefly, we are inclined to think, by the needless asperity and injudicious menaces of the popular party. They relied openly upon the strength of their adherents among the populace. If they did not actually encourage them to threats and to acts of violence, they availed themselves at least of those which were committed, to intimidate and depress their opponents; for it is indisputably certain, that the unconditional compliance of the court with all the demands of the constituent assembly, was the result either of actual force, or the dread of its immediate application. This was the inauspicious commencement of the sins and the sufferings of the revolution. Their progress and termination were natural and necessary. The multitude, once allowed to overawe the old government with threats, soon subjected the new government to the same degradation.

tion, and once permitted to act in arms, came speedily to dictate to those who were assembled to deliberate. As soon as an appeal was made to force, the decision came to be with those by whom force could at all times be commanded. Reason and philosophy were discarded, and mere terror and brute violence in the various forms of proscriptions, insurrections, massacres, and military executions, harassed and distracted the misguided nation, till, by a natural consummation, they fell under the despotic sceptre of a military usurper. These consequences, we conceive, were obvious, and might have been easily foreseen. Nearly half a century had elapsed since they were pointed out in those memorable words of the most profound and philosophical of historians. 'By recent, as well as by ancient example, it was become evident, that illegal violence, with whatever pretences it may be covered, and whatever object it may pursue, must inevitably end at last in the arbitrary and despotic government of a single person.'*

The *second* inexcusable blunder, of which the Constituent Assembly was guilty, was one equally obvious, and has been more frequently noticed. It was the extreme restlessness and precipitation with which they proceeded to accomplish, in a few weeks, the legislative labours of a century. Their constitution was struck out at a heat, and their measures of reform proposed and adopted like toasts at an election dinner. Within less than six months from the period of their first convocation, they declared the illegality of all the subsisting taxes; they abolished the old constitution of the States-General; they settled the limits of the Royal prerogative, their own inviolability, and the responsibility of ministers. Before they put any one of their projects to the test of experiment, they had adopted such an enormous multitude, as entirely to innovate the condition of the country, and to expose even those which were salutary to misapprehension and miscarriage. From a scheme of reformation so impetuous, and an impatience so puerile, nothing permanent or judicious could be reasonably expected. In legislating for their country, they seem to have forgotten that they were operating on a living and sentient substance, and not on an inert and passive mass, which they might model and compound according to their pleasure or their fancy. Human society, however, is not like a piece of mechanism which may be safely taken to pieces, and put together by the hands of an ordinary artist.—It is the work of Nature, and not of man; and has received, from the hands of its Author, an organization that cannot be destroyed

* Hume's History, chapter LX. at the end. The whole passage is deserving of the most profound meditation.

stroyed without danger to its existence, and certain properties and powers that cannot be altered or suspended by those who may have been entrusted with its management. By studying these properties, and directing those powers, it may be modified and altered to a very considerable extent. But they must be allowed to develope themselves by their internal energy, and to familiarize themselves with their new channel of exertion. A child cannot be stretched out by engines to the stature of a man, nor a man compelled, in a morning, to excel in all the exercises of an athlete. Those into whose hands the destinies of a great nation are committed, should bestow on its reformation at least as much patient observance and as much tender precaution as are displayed by a skilful gardener in his treatment of a sickly plant. He props up those branches that are weak or overloaded, and gradually prunes and reduces those that are too luxuriant: he cuts away what is absolutely rotten and distempered: he stirs the earth about the root, and sprinkles it with water, and waits for the coming spring: he trains the young branch to the right hand or to the left; and leads it, by a gradual and spontaneous progress, to expand or exalt itself, season after season, in the direction which he had previously determined: and thus, in the course of a few summers, he brings it, without injury or compulsion, into that form and proportion which could not with safety have been imposed upon it in a shorter time. The reformers of France applied no such gentle solicitations, and could not wait for the effects of any such preparatory measures, or voluntary developements. They forcibly broke over its lofty boughs, and endeavoured to straighten its crooked joints by violence: they tortured it into symmetry in vain, and shed its life-blood on the earth, in the middle of its scattered branches.

The *third* great danger against which we think it was the duty of the intelligent and virtuous part of the deputies to have provided, was that which arose from the sudden transference of power to the hands of men who had previously no natural or individual influence in the community. This was an evil, indeed, which arose necessarily, in some degree, from the defects of the old government, and from the novelty of the situation in which the country was placed by the convocation of the States-General; but it was materially aggravated by the presumption and improvidence of those enthusiastic legislators, and tended powerfully to produce those disasters by which they were ultimately overwhelmed.

No representative legislature, it appears to us, can ever be respectable or secure, unless it contain within itself a great proportion of those who form the natural aristocracy of the country, and are able, as individuals, to influence the conduct and opinions of the greater part of its inhabitants. Unless the power and weight

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and authority of the assembly, in short, be really made up of the power and weight and authority of the individuals who compose it, the factitious dignity they may derive from their situation can never be of long endurance; and the dangerous powers with which they may be invested, will become the subject of scrambling and contention among the factions of the metropolis, and be employed for any purpose but the general good of the community.

In England, the House of Commons is made up of the individuals who, by birth, by fortune, or by talents, possess singly the greatest influence over the rest of the people. The most certain and the most permanent influence, is that of rank and of riches; and these are the qualifications, accordingly, which return the greatest number of members. Men submit to be governed by the united will of those, to whose will, as individuals, the greater part of them have been previously accustomed to submit themselves; and an act of Parliament is reverenced and obeyed, not because the people are impressed with a constitutional veneration for an institution called a Parliament, but because it has been passed by the authority of those who are recognized as their natural superiors, and by whose influence, as individuals, the same measures might have been enforced over the greater part of the kingdom. Scarcely any new power is acquired, therefore, by the combination of those persons into a legislature: they carry each their share of influence and authority into the senate along with them; and it is by adding the items of it together, that the influence and authority of the senate itself is made up. From such a senate, therefore, it is obvious that their power can never be wrested, and that it would not even attach to those who might succeed in supplanting them in the legislature, by violence or intrigue, or by any other means than those by which they themselves had originally secured their nomination. In such a state of representation, in short, the influence of the representatives is not borrowed from their office, but the influence of the office is supported by that which is personal to its members; and Parliament is only regarded as the great depositary of all the authority which formerly existed, in a scattered state, among its members. This authority, therefore, belonging to the men, and not to their places, can neither be lost by them, if they are forced from their places, nor found by those who may supplant them. The Long Parliament, after it was purged by the Independents, and the assemblies that met under that name, during the Protectorate of Cromwell, held the place, and enjoyed all the form of power, that had belonged to their predecessors; but as they no longer contained those individuals who were able to sway and influence the opinion of the body of the people, they were without respect

or

or authority, and speedily came to be the objects of public derision and contempt.

As the power and authority of a legislature thus constituted, is perfectly secure and inalienable on the one hand, so, on the other, the moderation of its proceedings is guaranteed by a consciousness of the basis upon which this authority is founded. Every individual, being aware of the extent to which his own influence is likely to reach among his constituents and dependents, is anxious that the mandates of the body shall never pass beyond that limit, within which obedience may be easily secured. He will not hazard the loss of his own power, therefore, by any attempt to enlarge that of the legislature; and feeling, at every step, the weight and resistance of the people, the whole assembly proceeds with a due regard to their opinions and prejudices, and can never do any thing very injurious or very distasteful to the majority. From the very nature of the authority with which they are invested, they are in fact consubstantiated with the people for whom they are to legislate. They do not sit loose upon them, like riders on inferior animals, nor speculate nor project experiments upon their welfare, like operators upon a foreign substance. They are the natural organs of a great living body, and are not only warned, by their own feelings, of any injury which they may be tempted to inflict on it, but would become incapable of performing their functions, if they were to proceed far in debilitating the general system.

Such, it appears to us, though delivered perhaps in too abstract and elementary a form, is the just conception of a free representative legislature. Neither the English House of Commons, indeed, nor any assembly of any other nation, ever realized it in all its perfection; but it is in their approximation to such a standard, we conceive, that their excellence and utility will be found to consist; and where the conditions upon which we have insisted are absolutely wanting, the sudden institution of a representative legislature will only be a step to the most frightful disorders. Where it has grown up in a country in which personal liberty and property are tolerably secure, it naturally assumes that form which is most favourable to its beneficial influence, and has a tendency to perpetual improvement, and to the constant amelioration of the condition of the whole society. The difference between a free government and a tyrannical one, consists entirely in the different proportions of the people that are influenced by their *opinion*, or subjugated by *force*. In a large society, opinions can only be reunited by means of representation; and the natural representative is the individual whose example and authority can influence the opinions of the greater part of those in whose behalf he is delegated. This is the natural aristocracy of a civilized

nation; and its legislature is then upon the best possible footing, when it is in the hands of those who answer to that description. The whole people are governed by the laws, exactly as each clan or district of them would have been by the patriarchal authority of an elective and unarmed chieftain; and the lawgivers are not only secure of their places while they can maintain their influence over the people, but are withheld from any rash or injurious measure by the consciousness and feelings of their dependence on this voluntary deference and submission.

If this be at all a just representation of the conditions upon which the respectability and security of a representative legislature must always depend, it will not be difficult to explain how the experiment miscarried so completely, in the case of the French constituent assembly. That assembly, which the enthusiasm of the public, and the misconduct of the privileged orders soon enabled to engross the whole power of the country, consisted almost entirely of persons without name or individual influence, who owed the whole of their consequence to the situation to which they had been elevated, and were not able, as individuals, to have influenced the opinions of one fiftieth part of their countrymen. There was in France, indeed, at this time, no legitimate, wholesome, or real aristocracy. The noblesse, who were persecuted for bearing that name, were quite disconnected from the people. Their habits of perpetual residence in the capital, and their total independence of the good opinion of their vassals, had deprived them of any influence over the minds of the lower orders; and the organization of society had not yet enabled the rich manufacturers or proprietors to assume such an influence. The persons sent as deputies to the States-General, therefore, were those chiefly who, by intrigue and boldness, and by professions of uncommon zeal for what were then the great objects of popular pursuit, had been enabled to carry the votes of the electors. A notion of talent, and an opinion that they would be loud and vehement in supporting those requests upon which the people had already come to a decision, were their passports into that assembly. They were sent there to express the particular spirit of the people, and not to give a general pledge of their acquiescence in what might there be enacted. They were not the hereditary patrons of the people, but their hired advocates for a particular pleading. They had no general trust or authority over them, but were chosen as their special messengers, out of a multitude whose influence and pretensions were equally powerful.

When these men found themselves, as it were by accident, in possession of the whole power of the state, and invested with the absolute government of the greatest nation that has existed in modern

dern times, it is not to be wondered at if they forgot the slender ties by which they were bound to their constituents. The powers to which they had succeeded were so infinitely beyond any thing that they had enjoyed in their individual capacity, that it is not surprising if they never thought of exerting them with the same consideration and caution. Instead of the great bases of rank and property, which cannot be transferred by the clamours of the factious, or the caprice of the inconstant, and which serve to ballast and steady the vessel of the state in all its wanderings and disasters, the assembly possessed only the basis of talent or reputation; qualities which depend upon opinion and opportunity, and which may be attributed in the same proportion to an inconvenient multitude at once. The whole legislature may be considered, therefore, as composed of *adventurers*, who had already attained a situation incalculably above their original pretensions, and were now tempted to push their fortune by every means that held out the promise of immediate success. They had nothing, comparatively speaking, to lose, but their places in the assembly, or the influence which they possessed within its walls; and as the authority of the assembly itself depended altogether upon the popularity of its measures, and not upon the intrinsic authority of its members, so it was only to be maintained by a succession of brilliant and imposing resolutions, and by satisfying or outdoing the extravagant wishes and expectations of the most extravagant and sanguine populace that ever existed. For a man to get a lead in such an assembly, it was by no means necessary that he should have previously possessed any influence or authority in the community; that he should be connected with powerful families, or supported by opulent and extensive associations. If he could dazzle and overawe in debate, if he could obtain the acclamations of the mob of Versailles, and make himself familiar to the eyes and the ears of the assembly and its galleries, he was in a fair train for having a great share in the direction of an assembly, exercising absolute sovereignty over thirty millions of men. The prize was too tempting not to attract a multitude of competitors; and the assembly for many months was governed by those who outvied their associates in the impracticable extravagance of their patriotism, and sacrificed most profusely the real interests of the people at the shrine of a precarious popularity.

In this way, the assembly, from the inherent vices of its constitution, ceased to be respectable or useful. The same causes speedily put an end to its security, and converted it into an instrument of destruction.

Mere popularity was at first the instrument by which this unsteady legislature was governed: but when it became apparent,

that whoever could obtain the direction or command of it, must possess the whole authority of the state, parties became less scrupulous about the means they employed for that purpose, and soon found out that violence and terror were infinitely more effectual and expeditious than persuasion and eloquence. The people at large, who had no attachment to any families or individuals among their delegates, and who contented themselves with idolizing the assembly in general, so long as it passed decrees to their liking, were passive and indifferent spectators of the transference of power which was effected by the pikes of the Parisian multitude, and looked with equal affection upon every successive junto which assumed the management of its deliberations. Having no natural representatives, they felt themselves equally connected with all who exercised the legislative function; and, being destitute of a real aristocracy, were without the means of giving effectual support even to those who might appear to deserve it. Encouraged by this situation of affairs, the most daring, unprincipled, and profligate, proceeded to seize upon the defenceless legislature, and, driving all their antagonists before them by violence or intimidation, entered without opposition upon the supreme functions of government. The arms, however, by which they had been victorious, were capable of being turned against themselves; and those who were envious of their success, or ambitious of their distinction, easily found means to excite discontent among the multitude, now inured to insurrection, and to employ them in pulling down those very individuals whom they had so recently exalted. The disposal of the legislature thus became a prize to be fought for in the clubs and conspiracies and insurrections of a corrupted metropolis; and the institution of a national representative had no other effect, than that of laying the government open to lawless force and flagitious audacity.

It is in this manner, it appears to us, that from the want of a natural and efficient aristocracy to exercise the functions of representative legislators, the National Assembly of France was betrayed into extravagance, and fell a prey to faction; that the institution itself became a source of public misery and disorder, and converted a civilized monarchy first into a sanguinary democracy, and then into a military despotism.

It would be the excess of injustice, we have already said, to impute these disastrous consequences to the moderate and virtuous individuals who sat in the Constituent Assembly; but if it be admitted that they might have been easily foreseen, it will not be easy to exculpate them from the charge of very blameable imprudence. It would be still more difficult indeed to point

point out any course of conduct by which those dangers might have been entirely avoided; but they would undoubtedly have been less formidable, if the enlightend members of the Third Estate had endeavoured to form a party with the more liberal and popular among the nobility; if they had associated to themselves a greater number of those to whose persons a certain degree of influence was attached, from their fortune, their age, or their official situation; if, instead of grasping presumptuously at the exclusive direction of the national councils, and arrogating every thing on the credit of their zealous patriotism and inexperienced abilities, they had sought to strengthen themselves by an alliance with what was respectable in the existing establishments, and attached themselves at first as disciples to those whom they expected speedily to outgrow and eclipse.

Upon a review of the whole matter, it seems impossible to acquit those of the revolutionary patriots, whose intentions are admitted to be pure, of great precipitation, presumption, and imprudence. Apologies may be found for them, perhaps, in the inexperience which was incident to their situation; in their constant apprehension of being separated before their task was accomplished; in the exasperation which was excited by the injudicious proceedings of the cabinet; and in the intoxication which naturally resulted from the magnitude of their early triumph, and the noise and resounding of their popularity. But the errors into which they fell were inexcusable, we think, in politicians of the 18th century; and while we pity their sufferings, and admire their genius, we cannot feel any respect for their wisdom, or any surprise at their miscarriage.

The preceding train of reflection was irresistibly suggested to us by the title and the contents of the volumes now before us. Among the virtuous members of the first Assembly, there was no one who stood higher than Bailly. As a scholar and a man of science, he had long stood in the very first rank of celebrity: his private morals were not only irreproachable, but exemplary; and his character and dispositions had always been remarkable for gentleness, moderation, and philanthropy. Drawn unconsciously, if we may believe his own account, into public life, rather than impelled into it by any movement of ambition, he participated in the enthusiasm, and in the imprudence, from which no one seemed at that time to be exempted; and in spite of an early retreat, speedily suffered that fate by which all the well-meaning were destined to expiate their errors. His popularity was at one time equal to that of any of the idols of the day; and if it was gained by some degree of blameable indulgence and unjustifiable zeal, it was forfeited at least by a resolute

lute opposition to disorder, and a meritorious perseverance in the discharge of his duty. Even in the days of his greatest triumph, and during the prevalence of his gayest dreams of regeneration, he never seems to have violated the habitual gentleness of his manners, or to have conducted himself with any degree of acrimony towards his opponents. His character indeed appears to have been full of conciliation and mildness; nor is there a name perhaps in the whole annals of the revolution with which the praise of unaffected philanthropy may be more safely associated.

These memoirs include but a very small portion of the political life of their author. They begin with his first nomination as elector for the city of Paris, in March 1789, and end with an account of his proceedings as Mayor of Paris, up to October in the same year. His account of the transactions of these six months, which is exhibited in the form of a journal, with abundance of reflections and remarks, fills three octavo volumes of close printing, and is composed in a style so very diffuse and redundant, as scarcely to let us regret that he did not accomplish the design which he announces, of continuing them through the thirty-one months, which would have conducted him to the expiration of his mayoralty. Along with a number of details that are extremely fatiguing and insignificant, they contain a variety of interesting particulars, and are written, throughout, with a certain air of veracity and simplicity, which makes it impossible to refuse credit to the writer. It is upon this internal evidence indeed, that we are left to rely for the authenticity of the whole publication; for it is thrust into the world without one word of preface or explanation, without the name of an editor, or any account of the manner in which the manuscript was preserved, or the reasons for which it is published. There are traits, however, we think, scattered through the whole work, which leave no doubt of its being genuine; and though we are not aware that it discloses any thing of importance that was not formerly known, the narrative seems entitled to our attention, both as the production of an eye-witness of undoubted credibility, and as containing the sentiments of a man of virtue and genius, upon some of the most momentous transactions which history will have to commemorate.

M. Bailly had lived to the age of fifty, entirely occupied and delighted with his literary and scientific pursuits, and without the slightest disposition to connect himself with the political affairs of his country. His first anticipation of the revolution is expressed in the following words.

'In December 1786, I dined with the Marechal de Beauveau, and there,

there, for the first time, heard it affirmed that it was determined to call an assembly of the *Notables*. I was struck with this intelligence; and immediately anticipated the most important consequences, a change in the condition of things, and even in the form of the government. I did not indeed foresee the revolution exactly as it has happened, which I suppose no man then did; but the deplorable state of the finances sufficiently warranted my conjecture. The poverty of government had made it feeble and dependent; and the subject obtained from these circumstances an advantage of which I had no doubt it would avail itself. The convocation of an assembly, for the purpose of giving advice, would necessarily direct all eyes to the resources and administration of the kingdom; and when after a long sleep, or rather, a long absence, one begins to look into one's affairs, and to perceive how greatly they have been neglected, it is natural to remember who is best entitled to put them in order. I foresaw then, from that moment, not exactly a revolution indeed, but a series of important changes likely to turn to the advantage of the country. In an enlightened age, if reason be once called in, she can scarcely fail to predominate.'

The *Notables*, however, did nothing: and the States-General themselves might have been convoked, M. Bailly seems to think, with little greater effect, if time had not been given between the first annunciation of the plan and its final execution, to prepare and enlighten men's minds by an infinite variety of publications on the subject. We extract the following passage with pleasure, both for its truth, and for the honour it does to M. Bailly's feelings.

'It was by this training that the nation was prepared to recover, at the States-General, both the rights of the people and the privileges of the third order. But it should never be forgotten how much was owing on that occasion both to M. Necker and to the King, to the minister who proposed, and to the monarch who consented to that expedient. It is to them that we are indebted for the opportunity of regenerating the kingdom. This has been too little remembered. No tendency to despotism ever entered into the character of the King; he never desired any thing but the happiness of his people; and it was by this feeling alone that he was ever misled. If he has ever been prevailed on to make a rash exercise of his authority, it has only been by persuading him that he was conferring a benefit, or avoiding a disaster, and by showing him, in perspective, the prosperity and satisfaction of the whole nation. I am perfectly convinced that he never valued his authority, or made any exertion to retain it, except as the basis and the pledge of general tranquillity and order. In considering the causes of reform, we ought then to say, that the first and the chief was the character of Louis XVI. With a sovereign of less benevolence, or a minister of less capacity, there would have been no chance of a revolution.'

It is but justice to M. Bailly to observe, that throughout the whole of these memoirs, he uniformly speaks of the King in the same

same terms of affection and esteem as in the passage we have just recited; and as this work was composed in the very heat and excess of the republican phrenzy, there is not the slightest reason, independent of his general character, for calling in question his sincerity.

Preparatory to the convocation of the States, there was much talking of course in Paris about those who should be elected deputies; and a variety of lists were handed about in every circle. The name of M. Bailly did not appear in any of these; and it never entered into his imagination, he assures us, that such an honour was in contemplation for him. The Abbé Maury, indeed, and another friend of his, had predicted that he would be returned for Paris; but he gave no credit to their prophecies. He resolved, however, to attend the meeting of his district, in which the electors were chosen.

'I had walked in that morning,' he observes, 'from my residence at Chaillot, and sat down to rest myself on the terrace of the *Feuillans*. A young man, with whom I was not acquainted, passed by, and said, "You are going to the meeting of the district; you will be named an elector." I thanked him for his good opinion, and thought no more of the matter. I mention these trifles, to show that I was really carried on by circumstances to the places I have reached, and that without any exertion of my own. No one can say that I ever asked a vote from him, or even showed any desire to attain the honours that have been put upon me. I consider myself, therefore, as a sure proof that the highest situations may be obtained without solicitation or intrigue, and I mention it for the consolation and encouragement of those who might despair of succeeding in the career of moderation and integrity.'

Within a few months after writing these sentences, the author was dragged from his peaceful retreat to a loathsome prison, and, soon after, immolated by the fury of that populace, to whose capricious favour he had been indebted for his dangerous exaltation.

M. Bailly was nominated an elector for the district of *Les Feuillans*, and joined the general meeting of the electors of Paris, consisting of more than three hundred, in the Hotel de Ville, where they were busily employed in preparing the *cahiers*, or instructions for the direction of their deputies. M. Bailly enlarges with much complacency on the proceedings of this assembly, and pays many high compliments to the talents and address of persons whose names are altogether unknown to the public. It was reported at one time, that no deputy should be returned who was any way connected with government; and as the greater part of M. Bailly's fortune consisted in the pensions which had been bestowed upon him as a man of letters, he considered his exclusion as inevitable. He was relieved, he says, by this conviction, from a state of considerable agitation.

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'I had no faith, indeed,' he says, 'in the dangers which terrified my wife; but I was attached to the tranquillity and mediocrity of my former condition; and I was of opinion, that the States-General could do very well without me. Destitute of talents for oratory, and overwhelmed with timidity, I thought it would not be difficult to find in another the same zeal and integrity united with more suitable qualifications.'

In spite of all this, he was nominated the first deputy for the city of Paris, and takes that opportunity to make a variety of reflections on the share which men of letters ought to assume in political affairs, and on the consequences of their more active interference. We can only afford to lay the conclusion of these remarks before our readers. It affords a key, we think, to every thing that has been censured in his conduct, and exhibits a curious picture of the inconsistency and fanaticism of a philosopher.

'When a great people begin to think seriously of liberty, nothing can prevent their attaining it. The philosopher calculates the period at which this consummation will naturally take place, and is anxious, above all things, that it should not be precipitated. His calculations include also the how much and the how little of the liberty that ought to be accorded; and he is satisfied, that it is better to rest contented with something less than the maximum, than to purchase it at the expense of public tranquillity, and the lives of his fellow-citizens. If the ardent spirits that consider themselves as the only lawful children of freedom, brand such calculators with the name of bastards, they cannot very well deny that there is reason at least in their proceedings. I have always thought, and still think, that a little more of this philosophical spirit would have been of no disadvantage to the Assembly. Such have ever been my principles. My conduct has been dictated by the duties of the places in which I found myself. I think no more of my own reason from the moment that of the nation has declared itself. The highest of all laws is the authenticated will of the community; and from the time that it has been expressed, I have consulted nothing but that sovereign will. In all the offices I have borne, I have considered myself as the servant of the country, and yielded her my implicit obedience. The result has been a constitution, which in spite of its faults, must be admitted to be a masterpiece of wisdom.'

If the whole wisdom of the philosophers consists in following implicitly the dictates of the multitude who are not philosophers, we really do not perceive what benefit their country is to derive from their cooperation.

The first proceedings of the Assembly are pretty well known to all who take any interest in the history of the revolution; and we do not find, in M. Bailly's account of them, any thing very peculiar or important. He gives a copious extract of the debates with the clergy and noblesse about verifying their powers, and deliberating in common, or in separate orders. The second week of their sitting, and before those conferences were brought to a conclusion,

conclusion, he was elected Dean or President of the Assembly; an event which, he affirms, occasioned him the most lively astonishment, terror, and affliction. We will not trouble our readers with an account of all the embarrassments and difficulties he met with in the discharge of this office, nor with any observations on the tendency of the resolutions that were taken at this time by the Assembly. The tumultuary debates of the Convention were sufficiently familiar to our memory; but we really were not aware that the deportment of the Constituent Assembly had been so violent and unbecoming. Upon a question which occurred on the 16th June, about proceeding immediately to constitute the Assembly, M. Bailly observes,

'They had just begun to call over the names by my direction, when they were interrupted by cries and clamours, which made it impossible to hear any thing. They paused for a moment; but, as soon as the reading of the list was begun again, they were resumed more violently than ever. The scene of that evening gave me the impression of two armies on the eve of battle. A large table went across the hall. Before me, were those who insisted upon proceeding to the vote, to the number of three or four hundred. Behind were their opponents, about a hundred in number, all standing up, crying and bellowing louder than the more numerous band of their antagonists. From this party I was assailed with the most clamorous entreaties to put an end to the sitting; and tumultuous cries and menaces resounded from all quarters of the hall. The large table was fortunately between the contending parties; *and, but for that obstacle, I am persuaded that several of them would have come to blows.*'

After some compliments to his own steadiness and tranquillity, M. Bailly thinks proper, in the true tone of French enthusiasm, to observe,

'The Assembly never was more truly grand; and presented, indeed, at that moment, a most august and imposing spectacle. The president, calm and tranquil, and the great majority of its members in a profound silence and resolute serenity, which the cries and violence of their opponents could not disturb,' &c.

M. Bailly gives a very animated account of the famous decree of constitution adopted on the 17th June, on the motion of the Abbé Syeyes; upon every paragraph of which he has made an ample and encomiastic commentary. The most remarkable part of it is that by which, without any reference to the royal assent, it declares all the existing taxes illegal, and only permits them to be levied till the last day of the sitting of the Assembly.

The exclusion of the deputies from their hall, and the celebrated oath taken in the tennis-court, are among the most important of the proceedings detailed in these memoirs. These transactions are narrated with great animation; but as the substance of them

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is already familiar to the public, we shall not transcribe any part of the narrative. The following observations, which M. Bailly annexes, indicate the sanguine disposition of the Assembly, at the same time that they illustrate, in a remarkable manner, that unjustifiable tendency to intimidation and defiance which we have attributed to it in our introductory observations.

'By this resolution, the Assembly provided for its own security, took under its protection the interests of the whole kingdom, and ensured to it that constitution upon which it was just proceeding to deliberate. It cannot be doubted that there was a desire in the cabinet to disperse this assembly, now become too formidable and independent; that preparations were actually making for that purpose; and that it was in the prospect of such a measure, and of a great change in the ministry, that troops were assembled in considerable numbers all round Paris and Versailles. It is equally certain, that by the measure now adopted by the Assembly, their dispersion was become impracticable. If an order so daring could have been issued, it would not have been executed. The example of that day demonstrated that, if their hall was shut up, they would assemble elsewhere. If they were driven from Versailles, they would repair to Paris, or to some other city. How, indeed, were they to have been prevented? A few members might be imprisoned, but how could they have shut up six hundred! Those who were left at liberty would still have been the National Assembly; and the violence committed on their associates would have raised up the whole kingdom in arms.'

It is not easy to say, whether the ministry deserve the greatest censure for the weakness and irresolution of their measures, or the bad grace with which they successively abandoned them. Instead of holding out an appearance of cordiality, while they were resolute in the substantial part of their opposition, they harassed and exasperated the assembly by a succession of petty vexations, while they yielded up every thing that was worthy of a serious contention. They omitted the common phraseology of respect in their letters to the president: they detained the members in the rain till the other orders had taken their places; and after they were informed that the majority of the clergy had determined to join them, they blocked up the doors of internal communication between their places of meeting, and subjected them to the necessity of performing a long circuit through the streets, before the junction could be effected. M. Bailly justly observes, that these puerile proceedings brought them into contempt with the judicious, and exasperated the prejudices of the intemperate.

There is a very full account of the proceedings of the Royal Sessions, 23d June. It concluded, as our readers may remember, with an injunction to the three orders to retire each to their own hall, and to take the subjects proposed by the Sovereign into their immediate

immediate consideration. The clergy and the nobility obeyed; but the commons remained in their places. As M. Bailly's behaviour, upon this occasion, has been severely censured, and it rather appears in some measure misrepresented, we think it but fair to lay his own account of it before the public.

'When the other orders had gone out, the grand-master of the ceremonies came up to me, and said, "Sir, you have heard the orders of the King?" I answered, "Sir, the assembly, at its last sitting, adjourned till after the Royal Sessions. It is not in my power to dismiss it till it has deliberated on a motion to that effect." He rejoined, "Is this your answer, and may I communicate it as such to the King?" "Yes, Sir," I replied, and turning to some of my colleagues who were near me, I added, "The National Assembly, I conceive, can receive no orders." It has been confidently asserted, that I addressed these last words to the grand-master: but my official answer to his message was exactly as I have stated. I had too great a respect for the King to transmit to him any other answer; and I knew too well what was due from the president to the Assembly, to commit it to such an extent without its authority. Immediately after, Mirabeau took up the discourse; and addressing himself with much passion to the grand-master, said very nearly what is commonly ascribed to him: "Go, Sir, and tell those who sent you, that the bayonets of their soldiers are of no avail against the will of the nation." This answer has been loudly extolled; but, in truth, it was not an answer at all, but a voluntary and very improper apostrophe from an individual, who had no right to speak for the Assembly upon such an occasion. If it had been an answer, it was intemperate beyond all endurance. No one had spoken of bayonets—no one had hinted at force—nothing approaching to a menace had issued from the lips of M. De Brezé: he reminded us, according to his duty, of the King's orders. It was another question, indeed, whether the King had a right to give such an order; and the Assembly, in the issue of its deliberation, determined that he had not: but, in the mean time, I could only answer, that it could not separate without deliberating on the propriety of that measure; and I flatter myself that I acquitted myself of my duty in making that answer.'

There is a good deal of declamation and weak reasoning in praise and in defence of the violent proceedings of the Assembly: and yet M. Bailly himself admits that, ten years before, the propositions of the King would have been received with enthusiasm, and seems so well convinced of there being no necessity for precipitation, that he said at the table of the Duc de Nivernois, 'The consolidation of the three orders will infallibly take place by and by. It may be during the sitting of the present Assembly, or it may not be till the next; but nothing can prevent its accomplishment.' Talking of the apprehensions entertained of force being employed to overcome the refractory disposition of the Assembly,

Assembly, he resumes that tone of defiance which we have already reprobated, and says,

'But where was the force they were to employ? Were they sure the soldiery would obey them? The event has proved that they would not. What then could they have tried? Imprisonment! But imprisonments cannot last for ever, and justice is at their close. They may have wished to employ such expedients; but they had not courage to make the experiment. Besides, they might deceive the King as to operations which were dubious in their consequences; but violence could not be dissembled, and every scheme of that kind was the object of his aversion, and I am confident would have been rejected by him without the smallest hesitation.'

In following the progress of this narrative, nothing has struck us more than the singular address and talent for affairs, which is exhibited by men educated in habits the most unfavourable for their acquisition. M. Bailly himself is a most remarkable instance of this. Though constitutionally bashful and timid, and drawn, at the age of fifty, from a scientific retirement, and pursuits the most foreign from the intrigues of courts, or the dissensions of a popular assembly, it is astonishing with what management and sagacity he conducts himself in situations of the greatest delicacy and importance. His deportment, upon the arrival of the noblesse and the minority of the clergy, is a masterpiece of temper and of prudence: but the most remarkable display of address, perhaps, is, in the account which he gives of a conference held in the apartments of the keeper of the seals, for the purpose of persuading him, that, after the reunion of the three orders, the presidency should belong to the head of the ecclesiastics. M. Bailly, without assistance or preparation, had to maintain the rights of the third estate against the Duc de Croy and the Keeper on the part of the nobles, and the Cardinal of Rouchefoucauld and the archbishop of Aix on that of the clergy; and appears, from his own statement at least, to have replied to all their arguments with so much prudence, acuteness, and politeness, that he reduced them all to silence, and obtained an amicable resignation of their pretensions.

In the second volume, we have a pretty full detail of the debates, motions, and remonstrances occasioned by the assemblage of the troops in the vicinity of the metropolis; and of the deliberations of the Assembly, with regard to its declaration of the rights of man. Upon this latter subject, M. Bailly observes with more sobriety than belonged to his associates—

'It is no doubt a fine philosophical idea, to make a declaration of the rights of man the foundation of a political constitution. But such metaphysical notions bewilder the multitude more than they enlighten it, and tend to make every man forget his duty to his neighbour, in thinking only of himself. To inform a people of its rights, before making

making them familiar with their duties, leads naturally to the abuse of liberty, and to the usurpation of individuals. It is like opening a passage for the torrent, before a channel has been prepared to receive, or banks to direct it. Since the time of which I am speaking, I have frequently experienced the inconvenience of such a practice, and groaned over the evils it has occasioned.'

In another place he has the following very remarkable expressions.

'In strictness of principle, the sovereignty, no doubt, resides in the nation; every power and every right proceeds from the people; and as soon as its rights are recovered, they may be exercised to their fullest extent. A nation who recovers them after an interval of fourteen centuries, is on a level in point of right, with one which was formed but yesterday, and has never suffered from their privation. So stands the question as to right,—but how is it as to prudence? Rights can only be made effectual or supported by force; and we should be able to calculate exactly both the force by which they may be asserted, and that by which they may be overcome. We have a right to reclaim them entire; but, by such an attempt, do we not hazard the loss of all? and might it not be better to make a compromise between newly recovered rights, and ancient usurpations and establishments? These are great questions; and they can only be determined by the event. For the system of compromise there is the authority of the English, who consecrated the prerogative of the Sovereign, and the privileges of the barons, at the same time that they asserted the rights of the people. We have ventured deeper into the principle: if we succeed, we shall be amply justified, and shall eclipse the glory of our neighbours: if we do not succeed, we shall have lost an opportunity which can never recur, and thrown away the happiness of our country.'

M. Bailly was with the Assembly at Versailles, during the tumults that preceded and attended the capture of the Bastille on the 14th July, and he gives a very striking and picturesque representation of the anxieties and fears of the deputies, listening with their ears on the ground, to the distant sound of artillery, and alternately inflamed and alarmed by the contradictory reports that were every moment received from the metropolis, after the melancholy news of the insurrection had been confirmed, the Assembly, which continued its sittings, at this crisis, day and night, without intermission, was waiting in mournful silence for some farther intelligence, when a nobleman, with whom he was not acquainted, came up to M. Bailly, and taking him aside to a gallery, informed him that he had just parted from the Count d'Artois, and had taken the liberty of suggesting to him that it would be of the greatest advantage to the public, if the King would come to the Assembly, and make a public profession of his confidence in it, and of his good intentions towards the people: that the Count had been struck with the proposal, and that he had come to M. Bailly

Bailly to concert with him what it would be proper for the King to say if the plan should be adopted. M. Bailly immediately made out the sketch of an address, which the nobleman said he would put into the hands of the Count. On the following day, accordingly, the King entered without guards or any attendant but his brothers, and, standing up uncovered, addressed to the Assembly that affectionate and pathetic speech, which diffused all over France a glow of loyalty and devotion. M. Bailly informs us with great candour, that it was *not* the speech which he had furnished the night before, and that it was infinitely more touching and natural. The Assembly, after a burst of acclamation and applause, and filled with gratitude and love, rose all at once, without order or decree, at the departure of their Sovereign, and in a body accompanied him from the hall to the gates of the palace, 'to which he returned,' says M. Bailly, 'on foot, with the love of his people for his guard, and their representatives for his escort.' We cannot deny ourselves the pleasure of extracting M. Bailly's account of this triumphal procession. It is one of the few scenes upon which we can dwell with satisfaction, and makes us share for a moment in an enthusiasm which was not always at enmity with wisdom.

'The King proceeded slowly on foot, without guards or attendance. About twenty of the members formed a ring round him, that he might not be incommoded by the populace, who pressed in immense numbers around us. The trees—the gates—the walls—the statues on our way, were all clustered over with spectators. The procession lasted an hour and a half; the weather was bright and beautiful; peace was restored to all hearts, and joy to every countenance. The King inhaled that joy as he proceeded, mingled with the benedictions of the people. The cry of "Vive le Roi!" resounded without intermission, up to the very door of the palace, where the Queen appeared in a balcony, with the Dauphin in her arms, and held him out to the multitude, who wept with affection and delight. Never was procession so beautiful, so grand, or so affecting. The people cried, "He has no need for any other guards!" And M. Villeroi answered, "I may resign my office, for the nation has taken the duty of it on itself." On the road, M. De Vienne observed to the King, that the walk was long and fatiguing; but the Monarch, pointing to his vast and delighted escort, replied, 'O, no—not at all fatiguing.' Some one observed, that these acclamations did justice to his character; and he answered, "How could they ever have misconceived me?"—It is even said, that a young woman of the lower order, burst through the ring of Deputies, and clasped him in her arms, and that he would not allow her to be removed; but said, 'Do, let her alone.' When we arrived at the palace, the Swiss band struck up the tune, 'Where can you be so well as in the midst of your children?' an allusion which was received with a thunder of acclamation. I returned to the Assembly overcome with heat and fatigue, my clothes dripping

dripping with the exertions I had made to keep off the crowd from the person of the king; but I was insensible to every thing but pleasure, and intoxicated with the joy I had witnessed and experienced.'

The most manifest usurpation, it appears to us, that signalized this eventful period, was that of the electors of the city of Paris, who, instead of separating after the nomination of their deputies, held regular meetings, with a president and secretaries, at the Hotel de Ville, and, in this moment of distraction, assumed the absolute government of the metropolis. They established the national guards to the number of more than 60,000 men, without any authority either from the King or the Assembly, and negotiated both with the governor of the Bastille and with the insurgents, whom they could not dissuade from its assault. They also ordered the Bastille to be demolished, and went so far, at the instigation of M. Necker, as to publish a general amnesty, which the Assembly, however, refused to ratify. On the day after the King's visit to the Assembly, M. Bailly paid a visit to this body, and by them and the populace together, he was then elevated to the dignity of mayor; a nomination, however, that was afterwards ratified by the Sovereign. It has been frequently surmised, that this dignity was conferred on him by the influence of the Duke of Orleans; though it appears perfectly evident, both from these memoirs, and from every other authority, that M. Bailly had no sort of connexion with that detestable faction. He does not even seem to be aware of its existence or extent, unless he may be thought to have shadowed it out in the following general expressions.

'Succeeding events have convinced me, that from this time forward, an invisible agent has been at work in the city, who is not contented with the destruction of arbitrary power, or the liberty asserted on the 13th and 14th of July, and who has ever since scattered abroad all sorts of calumnies and falsehoods, to propagate discontent, suspicion, and disorder. This agent has not yet suspended his activity. To have carried on his abominable designs as he has done, he must have had a multitude of tools, considerable talents, and vast resources. The secret will one day be discovered, and the infernal genius and his ministering spirits detected.'

The succeeding events recorded in these volumes, scarcely require any particular notice. If we except a pathetic and animated account of the outrages attending the massacre of Messrs. Berthier and Foulon, to prevent which M. Bailly appears to have made the most strenuous exertions, they relate principally to the measures which he adopted for securing a supply of provisions for the capital, and for the arrangement of its police. We regret very much that they do not include the transactions of the 6th of October, and other succeeding days, in which M. Bailly's conduct

duct has been severely censured, and as to the details of which we are not yet in possession of any very authentic intelligence. From the affection and respect with which he uniformly speaks of the King, we are persuaded that a complete statement of his proceedings would exculpate him from any charge of insolence or cruelty. In the Appendix, along with a number of other documents relating to that portion of the Memoirs which do not seem to have been completed, there is a copy of the address with which he received the Monarch upon his arrival in Paris after the disgraceful disorders of the 5th and 6th of October. The heaviest accusation that has ever been brought against M. Bailly is, that in that speech he called the 6th of October 'a beautiful day;' and if he had applied such an epithet to it, in allusion to the crimes and outrages by which it had been distinguished, he would certainly have deserved the severest reprobation. Upon looking into the speech, however, which was delivered by him in his official capacity, on his Majesty's appearance within his jurisdiction, we find that he alludes only to the happy event of the King's arrival in the metropolis, to which, he affirms, his presence would infallibly restore tranquillity and order. The speech is in the highest degree complimentary and respectful; nor can we believe that M. Bailly, who unquestionably had no share in the outrages of that day, and probably was not then informed of their extent, could possibly intend to express any approbation of proceedings so contradictory to his principles and habits.

Upon the whole, though the details of this book are sometimes a little redundant, we have perused it with considerable satisfaction. The interest which it excites, however, arises more from the dramatic vivacity of the representation, and from the constant interposition of the sentiments and passions of an actor, than from the importance of the new information it contains. M. Bailly seems to have been instructed in none of the secrets of the revolution, and to have known nothing more of the agency by which it was effected, than could be gathered from the public proceedings of the Assembly and of the municipality. He was engaged in no conspiracies, and but imperfectly informed, it would appear, of any thing that was done beyond the precincts of the metropolis. From such a writer we can look for no new lights—no corrections of what has been misrepresented, or elucidations of what is mysterious. The secret history of the revolution certainly is not yet completely understood, and the chance is that it never will; since the disclosure can only be made upon the supposition that some of the confidential agents of Orleans have escaped the daggers of their associates, and acquired honesty enough to tell the truth.

ART. XIII. *Sur le Grand Dessein attribué à Henri IV. Roi de France.* Par M. de Chambrier. (From Memoires de l'Academie Royale des Sciences & Belles Lettres de Berlin. 1804.)

AMONG the various problems which have exercised the ingenuity, and displayed the learning of historical critics, none has received a degree of attention less proportioned to its importance, than the very interesting subject of the present memoir. That a prince, of whose fame the annals of Europe are full, stopped in the midst of his victorious career to form a project which should secure the future peace of the world; that he actually devoted the rest of his days to the accomplishment of this undertaking, and even made some progress in surmounting the obstacles with which it was attended, is a statement at once so important and so strange, that we might have expected, before the present day, a careful examination of its authenticity.—Whether it be, that there is in antiquaries and critics a natural predilection for the trifling, or that the investigation of the subject required talents and knowledge which are seldom coupled with skill in points and particles, it is certain that the question remains undecided; and M. Chambrier, in the paper now before us, displays little more than his good will to the prosecution of the inquiry. In hopes of directing the attention of abler persons to so curious a matter, and for the purpose of suggesting a few remarks upon one part of the question, we shall shortly state the substance of this memoir, beginning with the plan itself, of which all have heard the name, and many lamented the failure, in equal ignorance of its motives and its design. As often as the balance of power is mentioned, men recur to the chimerical project of Henry IV, and declaim upon the absurdity of attempting any similar arrangement, because the impracticability of what they term 'the most perfect form of the system,' is admitted. It may be worth while, however, to examine whether this famous scheme bears any relation to the external policy of modern times, known by the name of the balancing system; and whether it is, in any of its parts, founded upon the sage and virtuous principle by which that system is supported. Nor is any discussion without its advantages, which leads us to review a character so highly rated as that of Henry the Great, and to examine impartially, by one important test, his claims to that renown for political wisdom and integrity, which mankind have, with a rare unanimity, been so zealous to bestow on his memory.

Henry

Henry is said, immediately after the great victory at Ivry, to have formed this plan, denominated by M. Chambrier 'the most vast, singular, and advantageous for all Europe, which had ever been conceived.' In order to estimate its claims to these magnificent appellations, the following sketch may be consulted.

Europe was suddenly to be formed into a great commonwealth, under the imposing title of the '*Christian Republic*.' The Emperor of Germany was to be placed at its head, with high authority over the federacy, and increased powers in his private capacity of Germanic chief. The extent of his prerogatives was considered as attended with little danger, for this very satisfactory reason, that the plan proposed his office to be always conferred *according to merit*. In order to secure this excellent provision, Henry conceived the *novel* expedient of making the imperial dignity elective, and added a prohibition against conferring it twice in succession upon the same family. He farther thought proper to settle, that it should be given first to the house of Bavaria; and that this natural rival of the Austrian dynasty should receive, in perpetuity, all the neighbouring provinces of the natural enemy of France. The house of Austria was further to lose all its hereditary possessions in Europe, except Spain; and what is still more pleasant, the King of France, who proposed this idea, is said 'only to have reserved for himself the glory of conceiving' the grand and virtuous project. In return for these sacrifices, Austria was presented with the absolute and entire possession of every inhabited country out of Europe, either then known, or afterwards discovered; the only restriction upon her colonial supremacy, being a reservation in favour of free commerce. Men have laughed as much at the famous bull of Paul, as they have admired the plan of Henry; yet there was nothing half so absurd in the Pope's grant of the new world, which began and ended in a statement of abstract right, as this provision of the French monarch, by which the same right was to be forcibly maintained, and Europe was to conquer all the other parts of the world for the benefit of that power which it had violently stript of its lawful possessions at home.

The possessions of Austria were to be partly given away, partly revolutionized; and various new states and unions of states were to arise from the fragments of that great monarchy, on the confines of the empire. A republic was to be formed of the Netherlands together with Holland. Hungary and Bohemia were designed for two elective monarchies; the choice being vested in the Pope and the six hereditary potentates of France, Spain, England, Sweden, Denmark, and Lombardy. Poland was to be made elective in the same sense of the word;

and each of the three elective monarchies was to be increased by new possessions forcibly taken from other powers. The succession of Cleves was to be portioned out among such of the Germanic princes as France then favoured, and Austria opposed. The Pope was to have all Naples, and to be made chief of the Italian Federal Republic, a body composed of all the Italian states except Lombardy and the Milanese, which were reserved for the kingdom of the Duke of Savoy. Sicily, a member of this republic, was designed as a douceur for Venice; and Switzerland was to receive Franche-Compté and Alsace with a permanent oligarchical constitution.

The *Christian Republic*, thus formed by plunder and usurpation, was to begin its operations by persecution. Three different creeds were to be permitted, and all sects instantly extinguished. Moreover, every power not professing the Christian faith was to be expelled from Europe; and the Czar of Muscovy, being a believer, was to be offered a corner in the grand federacy, which, if he refused, he was immediately to be stript of his European dominions, and sent off to Asia after the grand signor. A good deal has been said of the balance of religion, in consequence of the spiritual part of this project; and truly, if the phrase has any meaning, its signification is as difficult to be discovered as the connexion between the temporal arrangements of the plan and the balance of power.

The means by which the scheme was to be carried into effect next deserve notice. Main force was the great secret; and the overtures being made to certain powers, it was proposed, that a large army should be instantly raised by such as agreed to the measure, for the purpose of compelling the rest to submit. The overtures were accordingly made, and much astonishment has been expressed at their favourable reception. We are told, that most of the European potentates came readily into the scheme, and that a certain prospect was obtained of raising at least half the forces which should be required for the whole service of the union. This has been denominated the most wonderful part of the story; and those who can scarcely believe that a prince of Henry's wisdom seriously formed so chimerical a plan, are still less disposed to admit that he found the obstacles to its execution so easily surmounted. But let us consider whether there be really any great wonder in any part of the statement,—whether the project was marked by a liberality and disinterestedness of mind too high for a prince in the moment of victory,—whether the prominent feature of the plan was romantic virtue, or that ambition after impossibilities, which we denominate splendid folly, or only a more ordinary love of aggrandizement, couched under a pretext of heroism

too

too thin to conceal it; and then let us ask, whether the reception which the proposals are said to have met with, be not precisely such as might have been expected from their own nature, and the circumstances of those to whom they were addressed. There is no task more instructive than that of destroying the wonders of history, and reconciling the strange passages of great men's lives with their general character and situation. In the present instance, the labour is trifling; a very slight glance over the foregoing outlines of the scheme, will be sufficient to strip it of the marvellous in which historians have clothed it, and to reduce it into the rank of the very ordinary occurrences in the cabinets of great princes.

The plan of Henry IV. was evidently a scheme for the utter extirpation of all those principles which modern politicians hold to be the most virtuous and enlightened. Under the name of perpetual peace, a name in which every treaty is included, the whole continent of Europe was to be instantly involved in a war, compared with which, no former hostility could be called general or unsparing. In order to alter the names and the numbers and the sizes of the different members of the commonwealth, a universal pillage was to be promoted; and those who refused to plunder were to enjoy the satisfaction of being classed with the plundered. In this way, the whole of the evils pretended to be destroyed were anticipated. Europe was to be plunged in hostilities, that peace might at some future period, be, contrary to the whole situation of human affairs, perpetual; those changes of dominion, for which war is chiefly dreaded, were to be the first step in the progress of the pacific system,—treachery and usurpation were to be enforced by immediate war, that war might not, at some future period, spring from treachery and usurpation, or be found necessary to prevent them.

What is the balance of power? What but a union to prevent all changes of dominion, a constant check upon the ambition of princes, a rallying point for principles of comprehensive and virtuous policy, and a defence for the weak against the strong? All this system is at an end, if the strong unite to arrange the dominion of the world, to parcel out states according to their fancy or interests, to spoil those who dare not resist, and to overwhelm, by an aggressive league, such as are powerful or brave enough to oppose. What matters it, that the longest tranquillity shall be the consequence of rooting out all the seeds of contradiction and revenge, that peace shall flourish when all are destroyed who had a right to defend or regain their rights by war? So much the worse. Injustice and wrong, in their worst forms, are then to enjoy a secure triumph, and the evil has only gained the quality of being irreparable. The '*solitudinem faciunt et appellant pacem*,' never applied

plied with half so much force, either to the professed usurpations of ancient Rome and of modern France, as to the plan of universal equity and peace ascribed to Henry the Great.

But it may be said, that this only removes the difficulty one step; and that the evident absurdities and inconsistencies of the scheme are a sufficient ground of doubt respecting its existence, with those who admire the talents of the French monarch. We should, however, recollect, that the incongruity is only between the title and the substance of the measure, between the pretext and the reality; and that, if other advantages than the chimerical one of perpetual peace could be secured to France by the cooperation of certain foreign powers, France showed no want of foresight, at least, by her attempts to seduce them with bribes, and to blind the mass of mankind with a council of Amphyctyons. There is, in fact, no great room to wonder at the folly of the plan by which France was to get rid, at once, of her great rival, to surround herself with petty states of her own creation, and to share the whole power of the continent with a few other nations, so impotent that they must be led by her, or so distant from the scene of action as to have no chance of ever taking part in any critical emergency. The indemnities all came from Austria or her allies, from the rival or the enemies of France. The favours were bestowed upon her friends, or upon such new states as the circumstances of the union must throw at her mercy. But why examine the ultimate effects of the scheme, when it is plain that its execution was never contemplated as either practicable or necessary? If the proposition could induce the chief powers of the continent to take part in the humiliation of Austria, the end of France was served; a few years of their cooperation were abundantly sufficient to reward her for the trouble of fancying a grand plan of a 'Christian Republic,' sufficient to make her mistress of all she had been fighting for, of all she has since gained by her arts and her arms.

Nor was there any thing so absurd in the outward appearance of Henry's plan, when skilfully dressed up and presented by his Jeannins and his Sullys. The ideas of men, even in the present day, are so very vague upon the subject of international policy, that we constantly find traces of errors, at least as gross as that which the King's project was intended to inculcate. The partition of Poland has been defended on the grounds of the equilibrium; and the ablest writer on these matters who has appeared for many years, has almost fallen into the same mistake. M. Gentz has argued, as if the chief object of international policy were to preserve certain great states, and consolidate smaller communities into large empires; forgetting that the '*balance of power*' has no meaning.

meaning, unless it be applied to the rights of all existing states, and that the universal monarchy of any one nation is only to be dreaded inasmuch as it supposes the general ruin of national independence. It is an error of the very same nature to which Henry's plan must have looked for a favourable reception with the bulk of mankind, and with those powers to whom it might be simply proposed, without the offer of new dominions, which generally accompanied the disclosure. To persuade a few neighbouring princes that their independence was the great end of all foreign policy; that, provided they flourished in freedom, it mattered not how little regard was paid to other potentates; that the cause of Europe meant their interests;—was a sort of doctrine which less skill and eloquence than the President's and the Duke's might easily have enforced. But other means, in fact, were used to secure the active cooperation for which those general topics served as the pretexts. And when we consider what those means were, and how the French monarch employed them, we shall both cease to wonder at his success in the negotiation, and to doubt what were its real objects.

The parties to whom he confided the scheme, were, the Pope, the Venetian and Swiss republics, the Duke of Savoy, the Electors of Mentz, Cologne, Bavaria, and the Elector Palatine; the Nobles of Hungary and Bohemia, certain free towns, and others. The Pope was to receive a whole kingdom (Naples) in real sovereignty, with the nominal supremacy of all Italy, and a place among the electors general; not to mention the inducements of persecuting the infidels, and stifling all sectarianism. It was very safe to entrust him with such secrets; and it was not being too sanguine to expect his concurrence. Venice was to receive the full possession of Sicily; certainly the richest acquisition with which the masters of the Adriatic could be bribed. It may be remarked, that no pains were taken to instruct the King of Sicily and Naples of these proceedings, which interested him as much as the Pope and Venice. He was to fall under the cognizance of the army of the Christian republic; the secret was to be communicated to him by heralds, and put home to him by bayonets. The Duke of Savoy, too, was initiated with perfect safety into a project which was to give him a rich crown, and exalt him from the lowest to the highest rank among the princes of Europe. It is not recorded that he made any objections to the proposal; no doubt he was persuaded of its excellent tendency to secure the peace of the world, and never hinted at the propriety of disclosing the scheme to the rightful owners of the realms which he was to receive. The Hungarian and Bohemian nobles naturally, that is, according to the nature of a feudal and factious aristocracy, preferred any change which destroyed the present hereditary dynasty,

nasty, and gave each of themselves a chance of the crown. In a word, all who were to be benefited by the projected wrongs and oppressions were made privy to the design, and zealously pledged their aid to the execution of it. Those who were to be ruined by the scheme, were spared the pain of knowing its existence; and those who were only remotely affected, had not time to give their full attention to the subject before its author was numbered with the victims of the scheme so happily consummated on St. Bartholomew's day.

It may be asked, then, where lies all the improbability which has given occasion to the reasonings of M. Chambrier and others against the existence of the plan? That a prince of Henry's plain good sense and intimate acquaintance with affairs, should have formed the design of giving perpetual peace to the world by means infinitely more chimerical than ever entered the head of a cloistered enthusiast, might indeed excite our wonder. But there is nothing very astonishing in the real state of the fact, that an ambitious and patriotic monarch, flushed with conquests, which, nevertheless, like all the victories of civil war, set bounds to the further progress of his arm against his foreign enemies, should have resolved to foment divisions among them, and raise such a party in his own favour as might spare the armies of France, while it raised her to the highest pitch of continental influence. Under pretence of giving peace to Europe--a pretence, addressed, not to his coadjutors whom he was bribing with spoil, but to the world in general, like all the appeals made in manifestoes and proclamations—he was only exciting a war of partition, and giving a new position to the balance which he saw that France could hold as she placed it. He was not one of those statesmen who try to form coalitions by describing the real interests of their neighbours in diplomatic conferences, and expect to make foreign armies march into the field by argument and declamation on the propriety of hostilities. His reasoning was much more practical; it was levelled to the mean capacities of cabinets, as it was drawn from a thorough knowledge of their nature. To one he said, 'Attack the House of Austria, and you shall have Lombardy for your share of the spoil;' to another, 'Go to war, and here are fifty thousand men to assist you.' These were the sort of topics chiefly insisted upon by Henry; and he knew them to be wonderfully well suited to the comprehensions of the powers he had to deal with. That he ever looked beyond the first movements of his coalition, or expected any thing from the organization of the Italian commonwealth, it would be absurd to imagine. His end was gained if Austria was attacked on all sides. Having secured Germany, the Pope, the Duke of Savoy, and Switzerland, by liberal offers of pillage; having

having made some progress in keeping the northern powers quiet by negotiation, and probably by secret offers also; and having succeeded in exciting the utmost discontent among the subjects of some of the Austrian provinces, no doubt can be entertained of his final and even speedy success, to the whole extent of his wishes—the general dismemberment of his great rival's dominions, had he lived longer, or been followed by less peaceful successors.

We have seen that the reception of his plan, where he propounded it, presents nothing more wonderful than the structure of the scheme itself. No improbability then remains to excite our doubts, unless perhaps some admirer of Henry's character should imagine that the perfidy of the transaction suited ill with his general good faith, and other moral qualities. But to such a reasoner we shall only suggest this plain consideration, that the monarch who would carelessly plunge his country and his neighbours in all the horrors of war, to pursue the gratification of his passion for a silly woman, was either not very likely to feel squeamish upon the much more doubtful question of gaining a great and good end by improper means; or was a person upon whose steadiness of principle in public affairs no confidence could be placed. The character of this singular person is in truth vastly too mixed to admit of any such positive inferences as those which are drawn against the likelihood of particular passages in a man's life, from their discrepancy with his general habits.

Although we are of opinion that the foregoing considerations render any discussion of the authenticity of the statements in Sully's memoirs a matter of subordinate importance, we shall nevertheless add a few words, for the purpose of noticing the evidence upon which those rest. It is to this view of the question that M. Chambrier directs his whole attention; and it may serve as a supplement to the remarks already offered upon the intrinsic merits of the subject.

Sully, says our author, is the only historian who mentions the particulars of Henry's plan, as we have above sketched it. Others talk of his *grand design*; but they mean by those terms a project for the general conquest of Austria, which is said to have been his real view, after he should have obtained the person of the Princess of Condé, by making war upon the Netherlands. From so hurtful a scheme, the Duke is reported to have turned him aside by his frugal system of government; and D'Etrées, in his *Memoires*, shows that, immediately after Henry's death, this prudent minister used his utmost influence with Louis XIII. and Mary the regent, in favour of pacific councils. M. Chambrier then argues, that the memoirs of Sully having been compiled from

from his papers by his secretaries, we may be permitted to question the solidity of the grounds on which the whole statement depends. He quotes father Avrigny, who gives it scarcely any credit; and adds, that the secretaries themselves, admitting the fact of Sully never having conversed distinctly on the subject, state their authority for the insertion to have been 'different pieces of manuscript, unsigned, half torn, little connected, and thrown aside as useless.' But we should remember that their statement of the plan is precise, and that they aver the possibility of tracing it distinctly in those documents. They also mention having broached the subject to their master, who certainly would have given them immediate disproof of the suppositions which they had formed, had they been greatly deceived, although nothing could be more natural than his refusal to furnish secret details when he saw them on the right scent. Nay, the very circumstance of the statement being found only in Sully's papers, forms of itself a presumption against the mistake or falsity of the compilers. It was at once likely that traces of the design should be left there, though in no other quarter, and improbable that the secretaries should incorporate with their memoirs, not an augmentation or correction of stories then in circulation, but a vision entirely unknown to all the rest of the world.

M. Chambrier offers several remarks upon the discrepancy of Henry's conduct, with various parts of the great design. By the treaty of Bruchsol in 1610, it is well known that Savoy was ceded to France as an indemnity for her aid to the Duke in conquering the Milanese. Other proofs are not wanting that the country of Nice was destined for France also. And the treaty of Halle stipulated the assistance of ten thousand men to the Princes of the league, in furtherance of their scheme for obtaining the succession of Cleves from the house of Austria, although by the *grand design*, that succession was to have been incorporated with Holland in an independent republic. But it is unnecessary to dwell at greater length upon these discrepancies. They are all reconciled by the view of Henry's *grand design*, which we have ventured to suggest in the preceding pages; and the facts, on a comparison of which they proceed, only serve to place, in a still stronger light, the opinion we have there stated as to the real nature of that famous project.

ART. XIV. *Sopra il Carbone che si rinchuide nei Pianti.* Memoria di Giambattista da S. Martino. (from *Memorie di Matematica è Fisica della Societa Italiana. Tom. VIII. Part II.*

IT is sufficiently singular that the sciences should suffer more than any other human concern, by the interruptions which arise

arise from local boundaries. We have seen, on many occasions, the difficulty with which works the most highly esteemed in one country become known, even to the most learned men of states situated in its immediate vicinity. Every one knows how long the immortal works of Bacon took to make their way across the Channel. The commentator on Kant's Philosophy, has informed us of the slowness with which a system that occupied every head on the right bank of the Rhine, crossed over to the left; and all Germany had been for twenty years busily occupied with romances and free-masonry, before it was suspected in England that such was the passion of the Germans. When we compare with this tardy and difficult communication of tastes and scientific lights, the rapid and hourly intercourse of ordinary commerce which unites the most remote quarters of the globe, we shall at least find reason to conclude that the interest excited by speculative pursuits, is of a kind very different in vivacity from the common desire of gain, and the gratification of our more sensual appetites. The bill of exchange which Mr. Bruce drew in the depths of Abyssinia, where no European had ever before penetrated, was duly presented for payment in Lombard-street. The small gold coins of ancient Greece and Rome, have survived the lapse of ages, when objects of infinitely greater real value, and of far more easy preservation, have only left the renown of their names to the present generation; and we are now about to show, that the trifling boundary of the Alps, has locked up from the rest of Europe, the knowledge of many scientific works, which, on the northern side of those mountains, would have spread themselves with rapidity over all the studies of England and France. It is, however, worthy of notice, that the converse of the position does not hold. The Italian philosophers appear to be in full possession of all the improvements, even the most recent, which their brethren the 'Filosofi Oltramontani' have been adding to the stock of literature and science.

There are in the different States of Italy, a greater number of scientific institutions of importance for the ardour of their researches and the regularity and value of their publications, than in any equal portion of territory in the rest of Europe. Neither the multiplied divisions of political society which have place in Germany, nor the more compact monarchies of England, France, and Spain, nor the crowded and busy population of Holland and the Netherlands, furnish any thing like the same number of distinguished academies. Leaving out of view a multitude of minor institutions, of societies devoted to the cultivation of the fine arts, and several physical academies, which have not as yet published memoirs (for example, those of Pisa and Pavia,) we have, in the north

north of Italy alone, (a very narrow district, placed in circumstances not the most favourable to the calm pursuits of science,) no fewer than five learned bodies, only one of which is ever mentioned in the north of Europe, and even that one very seldom referred to. The memoirs of the academies of Mantua, of Milan, of Padua, and of Turin, are all works of great merit. Of the latter, the only one ever quoted in England and France, probably because it alone publishes its transactions in the French language, we have begun to give our readers some specimens in the present Number. But more important than all these is the fund of original science contained in the transactions of the Italian Society of Verona. They are published in large volumes with great regularity, and contain a succession of the most interesting memoirs upon all the subjects of physical and mathematical science. We need only refer to the geometrical papers contained in the fourth volume of these transactions. We regret that this publication is of a date rather too far back to justify us in analyzing those tracts. They contain solutions of some problems, particularly of the famous problem, the simplest case of which is mentioned by Pappus Alexandrius, and of which the general case has been found to be of extreme difficulty by the methods of modern analysis, according to the first mathematicians. (*Berlin Memoirs for* 1798, *p.* 95.) Nothing can be conceived more perfectly rigorous, and at the same time more simple and elegant, than those geometrical investigations of the Italian mathematicians. Pappus mentions the problem in its easiest case, as having been solved by Apollonius, viz. to inscribe in a circle a triangle, whose sides pass through three given points in a given strait line. Cramé generalized this, so as to solve it wherever the points were placed.—(*Berlin Memoirs*, 1776.) In the same volume is a solution by La Grange, also by the modern analysis. Euler, and his pupils Fuss and Lexel, solved this case geometrically in the Petersburg Memoirs for 1780. Castiglione gave another solution in the Berlin Memoirs for 1777. L'Huilier, in the same Memoirs for 1798, solves the general problem, 'to inscribe a polygon in a circle, so that all the sides may pass through given points.' This he does by the algebraical calculus suggested by La Grange. But the Italian mathematician does it by the purest rules of ancient geometry. He was a young man of fifteen when he discovered and made it known. His name is Annibale Giordano of Naples. Several most able tracts of his are contained in the Neapolitan Memoirs. The other mathematician who solved it at the same time, is Professor Malfatti of Ferrari.

The Societies of Bologna and Florence are famous, especially the latter, for their scientific researches; and, not to extend the catalogue

catalogue of this bright constellation of genius, the transactions of the Neapolitan Royal Academy (*Atti della Reale Accademia delle Scienze et Belle Lettere di Napoli*) contain some of the finest researches, particularly upon mathematical subjects, of which any modern institution can boast. We need only refer to Signor Fergolana's two papers on local problems and porisms, (in which, by the way, he mistakes the nature of a porism most egregiously,) and still more to the additional tracts of Signor Annibale Giordano on the same subjects, and to the paper of Saladino on Caustics.

The insulated labours of individuals have kept pace with the progress of public institutions. Of these, except a few anatomical tracts, and the late astronomical discoveries, none have as yet been made known in the northern parts of Europe. That they deserve very great attention, the specimens which we have given in the present Number will, we trust, sufficiently evince.

In all the scientific researches of the Italians, we discover proofs of the most happy capacities for the pursuits of true philosophy. There is a distinctive character in their speculative inquiries, as well as in their schools of the fine arts. We meet with the same chasteness of style in the rigour of their induction, utterly void of that love of dazzling novelty, and that proneness to flimsy hypothesis, which distinguishes many masters of the French school; and equally remote from that dull and unprofitable fondness for mere facts, which characterizes the German daubers. We are not, it is true, so often astonished by grand discovery. We do not meet with the hand of a Black or a Lavoisier, any more than in their galleries we can expect to be arrested at every step by the vigour, the mighty force of a Rubens. But we find nothing to disgust by its tasteless flatness, or its unchaste ornaments. We are constantly delighted with elegance, subtlety, ingenuity—with that which best deserves the name of fine genius: a proneness to reason and combine, but to reason by combining facts: a love of speculation, but joined to a nice capacity for observation: a decided partiality for the exercise of the rarer and more beautiful powers of the mind, without any unfitness for the patient work of persevering and long sustained attention to details: a preference equally strong for efforts of original talent, and of that kind of talent which partakes of the fancy, and bears a relation to refined taste: a considerable degree of contempt for the mere exertion of memory and labour—the business of the linguist and the verbal critic—the work, the bodily toil performed hourly in all the book-maker shops of the three hundred states of Germany. In short, if nothing very sublime in the walks of scientific discovery has appeared among this fine and ill-appreciated people, they have given birth to numerous and varied works, of great

great beauty and exquisite ingenuity. They can show, even among the masters of their present school of philosophy, many Titians; and, as they once produced a Raphael to guide the pencil, we may expect to see them worship their own Newton, perhaps, before either France or England shall have given birth to a great master in the fine arts, and long before any one has arisen in Germany, capable of cutting the canvass, or mixing the colours.

We purpose, at present, to make our readers acquainted with some of the papers contained in the last publications of the *Societa Italiana*, premising that they will find others of much more signal merit in the volumes themselves. Some of these we cannot attempt to analyze, without the assistance of figures; and others are of a nature too purely algebraical, to admit of any intelligible abstract. We especially allude to the two papers in vol. IX, upon the question, '*Whether the circle can be rectified and squared?*' and several other analytical dissertations, as the papers on equations, and on the law of continuity. All these we earnestly recommend to our scientific readers, as singularly beautiful and satisfactory pieces of mathematical research: and we willingly indulge a hope that this reference may have the effect of making those excellent productions known in this country. At present, we shall confine ourselves to less extensive objects, and shall begin with the chymical and physiological paper of Signor S. Martino now before us, as a tract of some interest, from the great importance of the subject, and of considerable merit, from the general accuracy of the methods pursued in the experimental investigation of it, though we shall have occasion to show that it is remarkably deficient in the extent of its plan of inquiry.

After remarking that the discoveries of modern chymistry have reduced the simple elements of all vegetable substances to three bodies, carbon, oxygen, and hydrogen; that the origin of the earths, iron, and salts, which enter into their composition, is easily traced when the origin of the other component parts has been ascertained; and that the source of oxygen and hydrogen is evidently the water in which all plants grow; our author proposes, as the only remaining problem, to ascertain the origin of the carbonaceous matter. He sets out with a remark of old date, that the health and strength of plants seem to be intimately connected with the fat or oleaginous, that is, the carbonaceous qualities of their food. As this position has never been directly proved, he begins by offering an experimental demonstration of it.

He first prepared a perfectly well mixed and homogenous soil, formed of earth and manure; and having sown in equal portions of

of it, a lupin seed, and a grain of maize, he proceeded to make an accurate analysis of its component parts. In order to separate the vegetable mould salts, he used repeated agitation with distilled water, and found that no sensible quantity of salt was present, but that the soil contained above a third part of its weight of vegetable mould. The calcareous matter, or carbonate of lime, was then separated by means of acetous acid, and was found to compose about a tenth part of the mass. Sulphuric acid separated the argil, which amounted to somewhat more than the vegetable mould in weight; and the silicious matter being above one sixth, there were lost in the whole operation, not more than a two hundredth part.

The two vessels in which the plants were to grow, contained each twenty pounds of this soil, completely covered from the external air and moisture, except in a small hole for the stalk of the vegetable, and another for watering it. The water which exuded from this operation, was carefully collected. The vessels were scrupulously kept at a distance from all sources of carbonic acid, as fires, animals, fermentations, effervescences, &c.; were placed at a considerable height from the ground for the same reason; and were moistened only with water, which the test of *aqua calcis* proved to be quite free from any admixture of carbonic acid. The rain which fell during the four months that the experiment continued, was eight inches and four lines, but it was found to contain no carbonic acid: it seldom was allowed to touch the leaves, and never the soil. The water from time to time poured on the soil, was first carefully filtrated, and found to be of the exact weight of distilled water.

It only remained, when the plants had grown sufficiently large, to examine the changes produced, by the progress of their growth, upon the soil in the vessels. For this purpose, they were carefully drawn out, without taking away a particle of the mould, or leaving a single tendril of their roots in it. The mould of the lupin being weighed, was found to have lost 2910 grains in 116,400; that of the maize had lost 3395. The quality of this residuum was then examined, by a repetition of the analysis formerly described; and it was found, that the argillaceous and silicious parts had not been at all affected; that the vegetable mould was most diminished, having lost in the lupin pot 2546 grains, and in the maize pot 2971; while the calcareous earth had lost, in the former, 364, in the latter 424 grains. From this interesting result, our author concludes, that the carbonaceous matter alone furnishes the vegetable food, and that the mould and carbonate of lime are only useful as furnishing that carbon; a conclusion which we think by no means warranted by the preceding experiments.

Much

Much of the evidence on which it rests must no doubt depend on the subsequent portion of the inquiry, in which the constituent parts of the plants themselves are examined. But, in the present stage of the investigation, it is obvious to remark, that nothing can with confidence be laid down beyond this one position,—that vegetable mould and calcareous earth contribute to the nutriment of vegetables, and that argillaceous and silicious earths do not contribute thereto, at least by immediate absorption into the vegetable mass. It remains to prove, both the specific manner in which plants feed upon the two former bodies, and the negative position, that the two other substances are incapable of supplying indirectly some of the requisite aliment. The vegetable mould is not a simple carbon; the calcareous earth contains lime as well as carbonic acid. Therefore our author, by showing that the plants diminish the quantity of mould and of calcareous earth, has not proved that the diminution falls upon carbon and carbonic acid alone. He ought obviously to have repeated his process upon soil impregnated with lime, and containing no carbonate, and to have examined what he vaguely calls vegetable mould, the oleaginous matter of which no doubt contains carbon, as well as the more stubborn parts, but carbon united with hydrogen and oxygen, and in every respect different from the simple element itself. It was evidently necessary to undertake this previous investigation, instead of being satisfied with reducing the soil to four elements, argil, silex, carbonate of lime, and vegetable mould; which last is not a simple substance. It was necessary to consider that a body is not composed of all the simple substances which it contains, in binary and ternary compounds; and that plants, like animals, may be nourished by those compounds, when they could, possibly, find no food in the simple elements. It was, therefore, incumbent on our author to vary his experiments in a second particular, and to feed his plants upon vegetable mould, whose component parts were determined; so that he might examine the change produced on it by the process of vegetation. Lastly, in order to show the *inutility* of argil and silex to this process, it was necessary to vary the experiment still farther—to make the plants grow in a soil where no such bodies existed. He has only proved, that those substances are not actually absorbed by plants. They may, nevertheless, be as necessary to vegetation as the others. From all these plain considerations results a different, but compendious and accurate method of bringing the points at issue to a decision. Various processes of vegetation should at once have been begun, in the same circumstances, as to the nature of the seed, of the air, and of the water employed; but differing in the nature of the soil. One seed should have been sown in silex, and

and argil; another in vegetable mould; another in calcareous earth; another in mixtures of the two; another in various mixtures of those, with one or both of the former two substances. From the whole would have resulted, by examination of the soils, after the different processes, a clear solution of the question.

We have only one other remark to offer upon this first branch of the inquiry. It appears to be a considerable oversight in the author, not to have reflected, that the loss of weight sustained by the soil might possibly be occasioned by the extrication of some of its volatile compounds, without any equal addition of weight to the plant. The soil was covered up, but a space was left for the plant to shoot forth its stem; and through this space, the gases &c. may easily have made their escape. Nay, the respiration and transpiration of the leaves and buds of the vegetable itself, may have carried off part of the soil in a volatile form after secretion. The analogy of the animal economy would lead us to expect such an event; and there is little reason to suppose, that plants only respire and transpire the moisture which they inbibe, or its component parts. On the contrary, we know that they give out azotic gas in the night; and it remains to show, that this does not come from the soil as well as from the atmosphere. Indeed, it is not easy to conceive that it should come from the atmosphere alone; for, in the day, they give out oxygenous gas, evidently from the decomposition of something contained in them, effected by the sun's rays attracting the oxygen: And if the oxygen is thus separated from azote, supposing them to have absorbed atmospheric air, how should the darkness of the night assist the evolution of that azote? In other words, how should the light prevent the azote from flying off? The coincidence of the weight of the plant with the loss of the soil, admitting it to be much more complete than it is found to be, proves nothing in this question; for the plant has absorbed water and air.

Our author proceeds, in the second place, to lay down certain practical inferences, of much importance to agricultural science, but surely not distinguished by any great degree of originality;—that soil composed of sand and clay is unfit for vegetation; that such soil may be fertilized by manure, or by calcareous matter, or by mixture with other soils; that different plants require different degrees of fertility in the soil, in proportion as they consist of more or less carbon. Of these positions, however, our author's experiments may be admitted to furnish a theory or arrangement according to principle.

Our author next examined the constitution of the plants whose process of vegetation had been thus sedulously watched. The apparatus employed for this purpose was simple and well contrived:

it consisted of an air-tight furnace with a bellows; a separate place for the plant to burn upon, and a series of hydropneumatic vessels, the first filled with cold water, and destined to contain a phial through which the vapours of the burning plant should pass, in order that their aqueous parts might be collected; the rest containing pure solutions of caustic alkali, whose weight was previously ascertained, and destined to absorb the carbonic acid produced in the combustion. The process being now commenced, the combustion of the lupin furnished 8842 grains of carbonic acid; whence our author computes, that it contained 2475 grains of carbon; and he found the *caput mortuum* to consist of 168 grains. The maize furnished 10289 grains of carbonic acid, and consequently 2881 of carbon, and 200 of residuum. By an easy computation, but founded upon the supposition that the vegetable mould only furnishes carbon, and the calcareous matter only carbonic acid to the plant, our author reckons the total difference, on comparing the analysis of the plants with that of their soil, to be 5 grains in the case of the lupin, and 9 grains in the case of the maize.

From all these investigations, our author concludes, that the growth of plants, in so far as the essential element of carbon is concerned, depends entirely on the soil, that is, the vegetable mould and calcareous parts of the earth in which they grow; and that nothing can be less just than the hypothesis which ascribes to water the powers of nourishing vegetables: that the carbon which forms, according to his theory, the chief food of plants, is presented to them either uncombined, or in the form of acid, and that in both these forms the plants can receive it: that, unlike animals, they have no choice in their food, but must receive and secrete it as circumstances present it to them. He concludes his paper with a corollary, relating to the importance of analyzing different species of vegetables, by the apparatus and process above described. To ascertain their relative quantities of carbonaceous matter, is, according to him, the same thing with ascertaining their adaptation to various soils, and appreciating the changes which each soil must undergo, to render it a fit nursery of particular given vegetables. He gives an example in the analysis of a piece of wood 3000 grains in weight, which was found to contain 420 grains of hydrogen, 156 of oxygen, 2262 of carbon, and 162 of ashes. It is proper to remark, that none of these substances was obtained *per se*: the hydrogen was in the form of water; the carbon, in carbonic acid gas; and the oxygen in both the one and the other. So that its presence is only deduced, and its quantity estimated, from comparing the original weight of the wood with that of the

the products of combustion, calculating how much of these products (carbonic acid and water) consists of oxygen, deducting this as furnished by the atmosphere, and concluding that the difference between the remainder and the original 3000 grains, is oxygen contained in the plant. The paper closes with a tirade on the prospect which is opened, partly, if we well understand our author, by his researches, of studying nature in her most mysterious process, and a fervent prayer that the result may have ' un influenza diretta sull' scienze incremento delle scienze è sui vantaggi dell' uomo.' p. 20.

This paper, more especially the general inferences which it contains, will afford matter for some farther reflections, in addition to those formerly offered.

The apparatus employed by our author for ascertaining the constituent parts of the two plants, differs only in one respect from that used in the process known by the name of *the chymical analysis.* In that process vegetables (or animal matter) are placed in a strong earthen retort, and the heat of a sand-bath is applied gradually, and at last pushed to a great degree of intensity. The condensible vapours, which fly off, are received in refrigerating recipients; the uncondensible vapours, or permanently elastic fluids, are received in a pneumatic apparatus; and the body, submitted to this rude species of trial, is vaguely and falsely said to be composed of the different products thus obtained, together with the *caput mortuum* or fixed residuum which remains in the retort. The extreme incorrectness of this inference is obvious; for the process, instead of simply separating the elements of the body, mixes them in new proportions and combinations, so as to form a variety of compounds, not before existing in the substance submitted to examination. The process of Signor S. Martino differs from this only in substituting combustion for distillation and the difference is only an augmentation of inaccuracy and error. Had he analyzed the vegetables in the old way, by distillation, he would have driven off all their volatile parts, and obtained a residuum which must have included the carbonaceous matter required. This matter could never have been united with the oxygen of the plant during a slow distillation, or with the oxygen contained in the water of the plant; for both the oxygen and the water would have been driven off before any heat had been applied sufficient to oxygenate the carbon; the oil would have been driven off, in like manner, without decomposition: whereas, our author's process loses sight of this component part altogether, by decomposing it; and the quantity of carbon existing *as such* in the plant would immediately have been obtained, by an easy process, for analyzing the fixed residuum. Instead

of this, (which, nevertheless, we do not propose as a good method of analysis, but only as one infinitely better than our author's,) he decomposes all the binary or ternary compounds of which the plant may have consisted; and thus gives a most indeterminate and fallacious solution of the problem. He finds carbonic acid formed, and deduces from thence the quantity of carbon contained in the plant: he finds water formed, and thence deduces the quantity of hydrogen contained in the plant. But does it follow that those elements, carbon and hydrogen, may not have existed in a state of union in the plant? Would not the same results have followed, had the plant contained oil, without one particle of either loose carbon or loose hydrogen? Would not the combustion of this oil have presented water and carbonic acid exactly in the same manner? Would not water and carbonic acid have been formed by burning the plant, if it had been composed of oil and carbon—or oil and hydrogen—or oil, carbon, and hydrogen—or carbon and hydrogen—or carbon, oxygen, and hydrogen, in any imaginable proportions? It is obvious, then, that the analysis is the most fallacious that can be conceived in this point of view. But, in another respect, it is at least equally so. Our author obtains water from the process of combustion; and concludes from thence, that this water owes its oxygen entirely to the atmospherical air, the plant having only, according to him, furnished the hydrogen. But if the plant had contained oxygen as well as hydrogen separately, might not water have been formed without a particle of atmospherical air? And if water had existed already formed in the plant, would not the very same result have been obtained? Thirdly, he concludes, from finding carbonic acid gas, that carbon existed in the plant, and that it was oxygenated by the atmospherical air. But, suppose carbonic acid had existed in the plant already formed, would not the heat have drawn it off, and presented the very result from whence our author draws an inference, that carbon unoxygenated existed in the plant? Or, if carbon and carbonic acid had both been present in any imaginable proportion, would not carbonic acid have been obtained in the receiver of caustic alkali? Therefore, in three material respects our author's inference is absolutely fallacious: it makes no allowance for the possible existence of water, carbonic acid, and oil in the plants: and lays it down as certain, that certain substances, hydrogen, carbon, and oxygen, formed the sole constituent parts of the vegetable, when it is very possible that not a particle of either, *per se*, may have existed in it. Nor should we forget, that the nature of the soil, in which the plants are proved by our author's own experiments to have grown, renders it extremely probable that our supposition

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may be the right one. The soil which, according to him, alone gave them nourishment by absorption, was an unctuous vegetable mould, formed by animal ordure, and a carbonate of lime. Water was the only other substance engaged in the process. Here, then, we have oil, carbonic acid, and water, directly exhibited and proved, by our author himself, to have been copiously absorbed by the plants during their growth. Is it not reasonable to conclude, that the plants may have been composed of them? Nay, do not all former experiments on the physiology of vegetables teach us, that they contain oil? And does not the daily evidence of our senses show us that they contain water? Yet for all this no allowance is made by Signor da S. Martino.

There is one other particular in which we are forced to disagree with him. In his analysis of the bit of wood, he infers that oxygen was contained in it, not because he detected that substance, but merely because something was necessary to make his numbers balance, and because he could think of nothing else but oxygen for the purpose. For he expressly tells us, that the amount of the water, carbonic acid and fixed residue, was so much, that therefore he concluded the difference between this quantity and 3000 (the original weight of the wood) was all received from the atmosphere; and that he also inferred, that the carbon of the acid, and the hydrogen of the water, alone came from the wood, which left a deficit of 156 grains wanting to complete the 3000. Consequently, because the sort of wood employed contains no azote, this 156 grains must have been oxygen. It is singular that he never mentions what kind of wood he used. But, at any rate, the above deduction obviously possesses all the qualities of reasoning in a circle. No proof whatever is offered to show that the oxygen came from the atmosphere; no evidence is given of the escape of a portion of gas: and, admitting that such a portion had been proved to have escaped, we are left to conjecture that it was oxygen, merely because the author does not know that azote is contained in the wood: And, after all, it remains to be shown that the various changes which the constituent parts of the vegetable substance undergo in the experiment, produce no difference upon their specific gravities; for our author's calculation proceeds upon the constant assumption that no such alteration is occasioned.

Upon the whole, though we acknowledge the ingenuity of this paper, and especially admire the elegance of the method taken to analyze the soil; and though we admit the accuracy of the means used to effect the determinate growth of the plants in known substances, we must be excused for altogether denying the

the legitimacy of the author's general conclusions, on account of the defects attending the latter part of his process.

ART. XV. *Fleetwood: or the New Man of Feeling.* By William Godwin. In three volumes, 12mo. Richard Philips, London. 1805.

WHOEVER has read Caleb Williams, and there are probably few, even amongst those addicted to graver studies, who have not perused that celebrated work, must necessarily be eager to see another romance from the hand of the same author. Of this anxiety we acknowledge we partook to a considerable degree; not, indeed, that we had any great pleasure in recollecting the conduct and nature of the story; for murders, and chains, and dungeons, and indictments, trial and execution, have no particular charms for us, either in fiction or in reality. Neither is it on account of the moral proposed by the author, which, in direct opposition to that of the worthy chaplain of Newgate, seems to be, not that a man guilty of theft or murder is in some danger of being hanged; but that, by a strange concurrence of circumstances, he may be regularly conducted to the gallows for theft or murder which he has never committed. There is nothing instructive or consolatory in this proposition, when taken by itself; and if intended as a reproach upon the laws of this country, it is equally applicable to all human judicatures, whose judges can only decide according to evidence, since the Supreme Being has reserved to himself the prerogative of searching the heart and of trying the reins. But, although the story of Caleb Williams be unpleasing, and the moral sufficiently mischievous, we acknowledge we have met with few novels which excited a more powerful interest. Several scenes are painted with the savage force of Salvator Rosa; and, while the author pauses to reason upon the feelings and motives of the actors, our sense of the fallacy of his arguments, of the improbability of his facts, and of the frequent inconsistency of his characters, is lost in the solemnity and suspense with which we expect the evolution of the tale of mystery. After Caleb Williams, it would be injustice to Mr. Godwin to mention St. Leon, where the marvellous is employed too frequently to excite wonder, and the terrible is introduced till we have become familiar with terror. The description of Bethlem Gabor, however, recalled to our mind the author of Caleb Williams; nor, upon the whole, was the romance such as could have been written by quite an ordinary pen. These preliminary remarks are not entirely misplaced, as will appear from the following quotation from the preface to Fleetwood.

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'One caution I have particularly sought to exercise—"not to repeat myself." Caleb Williams was a story of very surprising and uncommon events, but which were supposed to be entirely within the laws and established course of nature, as she operates in the planet we inhabit. The story of St. Leon is of the miraculous class; and its design, to "mix human feelings and passions with incredible situations and thus render them impressive and interesting."

'Some of those fastidious readers—they may be classed among the best friends an author has, if their admonitions are judiciously considered—who are willing to discover those faults which do not offer themselves to every eye, have remarked, that both these tales are in a vicious style of writing; that Horace has long ago decided, that the story we cannot believe, we are by all the laws of criticism, called upon to hate; and that even the adventures of the honest secretary, who was first heard of ten years ago, are so much out of the usual road, that not one reader in a million can ever fear they will happen to himself.' Vol. I. Pref.

Moved by these considerations, Mr. Godwin has chosen a tale of domestic life, consisting of such incidents as usually occur in the present state of society, diversified only by ingenuity of selection, and novelty of detail. How far he has been successful, will best appear from a sketch of the story.

Fleetwood, the only son of a gentleman who has retired from mercantile concerns to the enjoyment of a liberal fortune, is born and educated among the mountains of Wales. He has no companions saving his father, an infirm though very respectable old gentleman, and his tutor, who was *not* a clergyman; notwithstanding which, he studied Plato without understanding him, and indemnified himself by writing sonnets which could be understood by nobody. Fleetwood being of course a passionate admirer of the beauties of nature, preferred scrambling over the heights of Cader Idris, adoring the rising and admiring the setting sun, to perusing the pages of Plato, and the poetry of his tutor. In one of these rambles, somewhat to the reader's relief, whose patience is rather tired by an unfruitful description of precipices, cascades, and the immeasurable ocean in the back ground, he at length meets with an adventure. A lamb, a favourite lamb, falls into a lake: the shepherd plunges in after the lamb: an aged peasant, his father, is about to plunge in after the shepherd, when Fleetwood, as might have been expected, anticipates his affectionate intentions. After remaining a reasonable time in the water, the shepherd holding the lamb, and Fleetwood supporting the shepherd, they are all three fished up by an interesting young damsel who approaches in a boat, and proves to be (according to good old usage) the mistress of William the shepherd, and the proprietor of

of the half-drowned favourite. This adventure leads to nothing except that, in the conclusion of the work, the interesting young woman unexpectedly pops back upon us in the very useful, though not very romantic character of an old sick-nurse; deserving, no less, in her advanced age, the praises of the Institution for Relief of the Destitute Sick, than in her youth she had merited a premium from the Humane Society. The worthy tutor, in like manner, vanishes entirely from our view, retiring to an obscure lodging in a narrow street, to finish his book of sonnets, and his commentary on Plato. His pupil is now introduced to the knowledge of mankind at the university. Here he discovers no aversion to distinguish himself among the dissipated sons of fortune, and soon becomes something very different from the climber of mountains and diver into lakes. But he acquits himself of all share in a *quizzing* scene played upon a *fresh-man* called Withers, who had written a tragedy on a very interesting subject—the cleansing of the Augean stable. This piece he is prevailed upon to recite to certain arch wags, who receive it with rapture, fill the author drunk, and bear him home, crowned with parsley and dropping with wine, in classical triumph. They have afterwards the address to pass a wooden figure upon him for the master of his college, who after a rebuke pronounced in character by one of the quizzers, who chanced to be a ventriloquist, proceeds, by some unknown mechanism, to inflict upon Withers the academical discipline under which Milton is said to have smarted of yore; but, far from imitating the submission of his sublime prototype, the modern bard kicked and cuffed in stout opposition, till he discovered the impassable character of his antagonist. The joke ends by Withers going mad, and the ingenious authors of his distress being rusticated. We presume the ventriloquist found a refuge with Fitz-James, and the mechanist with Merlin or Maillardet. What connexion this facetious tale has with Fleetwood or his history, does not appear; but we reverence the established privilege of an Oxonian to prose about all that happened when he was at Christ-church.

We now accompany Fleetwood on his travels. Paris was his first stage, where he had the strange and uncommon misfortune to be jilted by two mistresses. The first was a certain marchioness, whose mind 'resembled an eel,' and who delighted in the bold, the intrepid, and the masculine. Her lover was greeted with an impudent amazonian stare, a smack of the whip, a slap on the back, and a loud and unexpected accent that made the hearer start again. Upon discovering the infidelity of this gentle lady, Fleetwood, being in Paris, followed the example of the Parisians, but not without experiencing certain twinges of pain and

and revolutions of astonishment, to which we believe these good people, on such occasions, are usually strangers. In a word, he took another mistress. The Countess de B. had every gentle amiability under heaven, and only one fault, which might be expressed in one word if we chose it, but we prefer the more prolix explanation of the author.

'Yet the passion of the Countess was rather an abstract propensity, than the preference of an individual. A given quantity of personal merit and accomplished manners was sure to charm her. A fresh and agreeable complexion, a sparkling eye, a well-turned leg, a grace in dancing or in performing the manœuvres of gallantry, were claims that the Countess de B. was never known to resist.' Vol. I. p. 152.

Upon discovery of this frailty, our hero's patience forsook him; and he raved, fumed, and agonized, till ours likewise was on the verge of departure. In this paroxysm, his taste for the mountain and the desert returned upon him like a frenzy; and as there were none nearer than the Alps, to the Alps he flies incontinently on the wings of despair. He repairs to the mansion of a venerable old Swiss gentleman, a friend of his father, delightfully situated in the valley of Ursereen, in a wood of tall and venerable trees; a very extraordinary and fortunate circumstance for the possessor, as we will venture to say that it is the only wood that ever grew in that celebrated valley, which is the highest inhabited ground in the Alps. The host of Fleetwood carries him to a pleasure party on the Lake of Uri, and chooses that time and place to acquaint him, that while he was living jollily at Paris, his father had taken the opportunity of dying quietly in Merionethshire.* The effect of this intelligence upon Fleetwood is inexpressibly striking. He ate no breakfast the next morning; and it was not till the arrival of dinner, that 'hunger at length subdued the obstinacy of his grief.' Ruffigny, his host, now joins him; and after a reasonable allowance of sympathy and consolation, entertains him with the history of his connexion with his father.

Ruffigny, left in infancy to the guardianship of a wicked uncle, who thirsted after his inheritance, had been trepanned to Lyons, and bound apprentice to a silk-weaver, or rather employed in the more laborious part of his drudgery. His feelings on being gradually subjected to this monotonous and degrading labour, are very well described, as also the enthusiastic resolution which he forms, of throwing himself at the feet of the King

* By the way, we greatly question the locality here pitched on. We know of no such lake as the lake of Uri; but we suppose the lake of Lucerne, a lake of the four cantons, was the scene of this affecting discovery. But Mr. Godwin is not much at home in Switzerland.

King of France, whom the boy had pictured to himself like the Henry and the Francis, the heroes of the legendary tales of his country. His escape, his journey, his disappointment, have all the same style of merit; and it is in such painting, where the subject is actuated by some wild, uncommon, or unnatural strain of passion and feeling, that we conceive Mr. Godwin's peculiar talent to lie. At Paris, the deserted Ruffigny is patronized by Fleetwood, the grandfather of our hero; and his future connexion with that family is marked with reciprocal acts of that romantic generosity which is so common in novels, and so very rare in real life.

The main narrative is now resumed. Ruffigny accompanies Fleetwood on his return to England, where he finds in his paternal dwelling 'an empty mansion and a tenanted grave.' Notwithstanding his grief for his father's death, he is on the point of forming a connexion with a bewitching Mrs. Cormorin, (*quære* Cormorant?) who had lately cohabited with Lord Mandeville, but, having quarrelled with her admirer, had a heart and person vacant for the first suitable offer. This naughty affair is interrupted by the precipitate retreat of Ruffigny, who, not choosing to be present where such matters were going forward, was in full march towards Switzerland, when he is recalled, by Fleetwood's consent, to sacrifice his young mistress to his old friend. After this period, the story flags insufferably. Fleetwood, like king Solomon of yore, tries the various resources of travelling, society, literature, politics, and farming, and, with him, pronounces them all vanity and vexation of spirit. In this vain pursuit, he becomes a confirmed old batchelor; and the interest of the story, contrary to that of every other novel, commences when he exchanges this unprofitable state for that of matrimony.

This grand step he is induced to take by the disinterested arguments of Mr. Macneil, a shrewd Scotchman, whom he meets on the lakes of Cumberland, and who at that very moment had four unmarried daughters upon his hands. The accomplishments of these damsels were rather overshadowed by some peculiarities in the history of their mother. This lady, when very young, had, while in Italy, married her music-master, who gave her no small reason to repent her choice. Macneil delivered her from the tyranny of this ungrateful musician, who had immured her in a ruinous castle, his hereditary mansion! That she gave her deliverer her heart was natural enough, but she also bestowed upon him her hand, to which the deserted minstrel had an unalienable claim. The ladies on the lakes of Cumberland judging that two husbands was an unreasonable allowance, declined intercourse with the fair monopolist. Macneil was therefore about

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to return to Italy, where he had vested his whole fortune in the hands of a banker of Genoa; but, upon the fervent suit of Fleetwood, he agreed that his youngest daughter Mary should remain in England. He himself, with his wife and three eldest daughters, proceed on their voyage, leaving Mary a visitor in a family at London. The vessel in which the Macneils had embarked is wrecked in the Bay of Biscay, and all that unfortunate family perish in the waves. This disastrous intelligence is nearly a death-blow to poor Mary, the sole survivor, and to whom her mother and sisters had hitherto been all in all. The Genoese banker finding that no vouchers of his being the depositary of Macneil's fortune had escaped from the wreck, refuses to give any account of it; and our interest in Mary's distress and desolation is unnecessarily interrupted by a minute detail of the steps by which Fleetwood in vain attempted to bring a banker to confess the receipt of a sum which could not otherwise be proved against him. It is even hinted, as a reason for which he pressed his marriage with the deserted orphan, that he at length became afraid that, since the question rested on a trial of character betwixt him and the Genoese, he might himself be suspected of having embezzled her fortune. This is one of the instances of coarseness and bad taste with which Mr. Godwin sometimes degrades his characters. In Caleb Williams, a gentleman passionately addicted to the manners of ancient chivalry, becomes a midnight assassin, when an honourable revenge was in his power; and in Fleetwood, a man of feeling, in soliciting an union pressed upon him by love, by honour, and by every feeling of humanity, is influenced by a motive of remote and despicable calculation, which we will venture to say never entered the head of an honest man in similar circumstances.

Fleetwood and Mary are at length married; and from this marriage, as we have already noticed, commences any interest which we take in the history of the former. Indeed it can hardly be called a history, which has neither incident nor novelty of remark to recommend it, consisting entirely of idle and inflated declamations upon the most common occurrences of human life. The union of Mary and Fleetwood, considering the youth and variable spirits of the former, and the age and confirmed prejudices of the latter, promises a more interesting subject of speculation. Upon their arrival in Wales, the reader is soon made sensible that a man of feeling, upon Mr. Godwin's system, is the most selfish animal in the universe. We appeal to our fair readers if this is not a just conclusion, from the following account of the matrimonial disputes of this ill-matched pair. Upon visiting the family mansion in Merionethshire, the lady gives the first cause of disgust,

disgust, by rather hastily appropriating to her own purposes a closet which had been the favourite retirement of her husband. Without having the force of mind to tell Mary that this unlucky *boudoir* was consecrated to his own studies, Fleetwood nourishes a kind of secret malice against his wife for her unlucky selection of this retreat, hallowed as it had been to his own exclusive use. This is hardly over, when a new offence is given. While our hero is reading to his young bride his favourite play, 'A Wife for a Month,' (in fact he did not retain his own for many more,) Mary, either from natural levity, or because the ardent declamations of the amorous Valerio excited comparisons unfavourable to Fleetwood, chooses to desert the rehearsal in order to botanize with a young peasant on the cliffs of Cader Idris. Now there is nothing unnatural in this incident; and we believe domestic felicity is frequently interrupted by such differences of taste and neglect of the feelings of each other. But we doubt whether our readers will not think the tragic declamations of Fleetwood infinitely too high-toned for the nature of his misfortunes. It is not very pleasant to lose possession of a favourite closet, and it is teazing enough to be deserted while reciting a favourite author; but surely the *sesquipedalia verba* of Fleetwood attach to these grievances a degree of consequence in which none can sympathize, and which to most will be the subject of ridicule. Another cause of dispute, of a still more important, as well as of a more common kind, arises betwixt Fleetwood and Mary. This concerns the share to be taken in the visits and public society of the country in which they lived. Mary's fondness for these amusements excites the displeasure, and at length the jealousy of her husband; and he expresses both with very great indulgence to his own feelings, and very little to those of his lady. In these circumstances her health began to give way, under the perpetual irritation occasioned by the deportment of her moody partner; and her mind settled in mournful recollection upon the contemplation of the loss she had sustained by the shipwreck of her sisters and parents. We transcribe the following account of the progress of her malady as one of the few interesting passages in the book.

'One further circumstance occurred in the progress of Mary's distemper. She would steal from her bed in the middle of the night, when no one perceived it, and make her escape out of the house. The first time this accident occurred, I was exceedingly alarmed. I awoke, and found that the beloved of my soul was gone. I sought her in her closet, in the parlour, and in the library. I then called up the servants. The night was dark and tempestuous; the wind blew a hollow blast; and the surges roared and stormed as they buffeted against the hurricane. A sort of sleet blew sharp in our faces when we opened the door of

of the house. I went myself in one direction, and despatched the servants in others, to call and search for their mistress. After two hours she was brought back by one of my people, who, having sought in vain at a distance, had discovered her, on his return, not far from the house. Her hair was dishevelled; her countenance as white as death; her limbs cold; she was languid and speechless. We got her, as quickly as we could, to bed.

'This happened a second time. At length I extorted her secret from her. She had been to the beach of the sea to seek the bodies of her parents. On the sea-shore she seemed to converse with their spirits. She owned she had been tempted to plunge herself into the waves to meet them. She heard their voices speaking to her in the hollow wind, and saw their faces riding on the top of the waves, by the light of the moon, as it peeped precariously through the storm. They called to her, and bid her come along, and chid her for her delay. The words at first sounded softly, so that it seemed difficult to hear them, but afterwards changed to the most dolorous and piercing shrieks. In the last instance, a figure had approached her, and seizing her garment, detained her, just as she was going to launch herself into the element. The servants talked something of a gentleman, who had quitted Mary precisely as they came up to conduct her home.

'She confessed that, whenever the equinoctial wind sounded in her ears, it gave a sudden turn to her blood and spirits. As she listened alone to the roaring of the ocean, her parents and her sisters immediately stood before her. More than once she had been awaked at midnight by the well known sound; and looking out of bed, she saw their bodies strewed on the floor, distended with the element that filled them, and their features distorted with death. This spectacle she could not endure; she had crept silently out of bed, and, drawing a few clothes about her, had found her way into the air. She felt nothing of the storm; and, led on by an impulse she could not resist, had turned her steps towards the sea.' Vol. III. p. 79—82.

This kind of partial derangement of the intellect is very strikingly described. It has not, however, the merit of novelty, as the same idea occurs in the licentious novel of Faubles, written by the famous Lauvet. At the conclusion of that work the hero tells us, that still when the south wind whistled, or the thunder rolled, his disordered imagination presented to him the scene which had passed at the death of his mistress; he again heard the sound of the midnight bell, and the voice of the sentinel who pointed to the river, and coldly said, 'She is there.' We quote from memory, a work which, for many reasons, we would not choose to read again; but we think that this is the import of the passage, and it considerably resembles that in Fleetwood, though the idea in the latter is more prolonged and brought out.

Mary is removed to Bath, where she recovers from her depression

sion of spirits, to fall into the opposite extreme of giddy and unceasing hilarity. At this time, Fleetwood is joined by two cousins, both under his patronage, and who come to reside in his family. They are half brothers. Kenrick is an open, candid, thoughtless young soldier; Gifford a deep hypocritical villain. These two brothers, like the black and white genius in Voltaire's tale, attend Fleetwood through the rest of the book, and are the causes of the good and bad fortune which befall him. Gifford contrives to insinuate into the mind of his patron a suspicion of the virtue of Mary, which is strengthened by her being in reality the confidante of Kenrick, to whom he artfully represents her as unlawfully attached. This plot, in itself rather threadbare, is not, in the present instance, managed with uncommon felicity. The circumstances which excite the suspicions, and finally the furious rage of Fleetwood, are such as usually occur in such cases; but when he drives his pregnant spouse out of his house, he carries his jealous resentment to a most disgusting excess. We can pardon the vehemence of Othello who kills his wife outright; but, in exposing a destitute orphan to all the miseries of poverty and beggary, we humbly think Fleetwood merits any title better than that of a man of feeling. At the same time that he has been guilty of this outrage, he continues distractedly fond of his wife, as will plainly appear from the following scene enacted upon the Continent, whither he had retired from the scene of his supposed disgrace and actual misery. He ordered wax models to be made, so as to represent his wife and her supposed seducer, with a barrel organ modulated to the tunes which they used to play and sing together. These were to be produced on the aniversary of his wedding-night.

'When at length the fifteenth of July came, I caused a supper of cold meats to be prepared, and spread in an apartment of my hotel. All the materials which I had procured with so much care and expense, were shut up in the closets of this apartment. I locked myself in, and drew them forth one after another. At each interval of the ceremony, I seated myself in a chair, my arms folded, my eyes fixed, and gazed on the object before me in all the luxury of despair. When the whole was arranged, I returned to my seat, and continued there a long time. I then had recourse to my organ, and played the different tunes it was formed to repeat. Never had madness in any age or country so voluptuous a banquet.

'I have a very imperfect recollection of the conclusion of this scene. For a long time I was slow and deliberate in my operations. Suddenly my temper changed. While I was playing on my organ one of the tunes of Kenrick and Mary—it was a duet of love; the mistress, in a languishing and tender style, charged her lover with indifference; the lover threw himself at her feet, and poured out his soul in terms of adoration.

ration. My mind underwent a stange revolution. I no longer distinctly knew where I was, or could distinguish fiction from reality. I looked wildly and with glassy eyes all round the room; I gazed at the figure of Mary; I thought it was, and it was not, Mary. With mad and idle action I put some provisions on her plate; I bowed to her in mockery, and invited her to eat. Then again I grew serious and vehement; I addressed her with inward and convulsive accents in the language of reproach; I declaimed with uncommon flow of words upon her abandoned and infernal deceit; all the tropes that imagination ever supplied to the tongue of man seemed to be at my command. I know not whether this speech was to be considered as earnest, or as the sardonic and bitter jest of a maniac. But while I was still speaking, I saw her move—if I live, I saw it. She turned her eyes this way and that; she grinned and chattered at me. I looked from her to the other figure; that grinned and chattered too. Instantly a full and proper madness seized me; I grinned and chattered in turn to the figures before me. It was not words that I heard or uttered; it was murmurs and hissings, and lowings, and howls. I became furious. I dashed the organ into a thousand fragments. I rent the child-bed linen, and tore it with my teeth. I dragged the clothes which Mary had worn, from off the figure that represented her, and rent them into long strips and shreds. I struck the figures vehemently with the chairs and other furniture of the room, till they were broken to pieces. I threw at them, in despite, the plates and other brittle implements of the supper-table. I raved and roared with all the power of my voice. I must have made a noise like hell broke loose; but I had given my valet a charge that I should not be intruded upon; and he, who was one of the tallest and strongest of men, and who ever executed his orders literally; obstinately defended the door of my chamber against all inquisitiveness. At the time, this behaviour of his I regarded as fidelity; it will be accounted for hereafter. He was the tool of Gifford; he had orders that I should not be disturbed; it was hoped that this scene would be the conclusion of my existence. I am firmly persuaded that, in the last hour or two, I suffered tortures not inferior to those which the North American savages inflict on their victims: and, like those victims, when the apparatus of torture was suspended, I sunk into immediate insensibility. In this state I was found, with all the lights of the apartment extinguished, when, at last, the seemingly stupid exactness of my valet gave way to the impatience of others, and they broke open the door.' Vol. III. p. 248—253.

The rest of the story may be comprised in a few words. Gifford, whom Fleetwood had constituted his heir, becomes impatient to enter upon possession; and finding his patron's constitution proof against mental distress, he attempts, with the assistance of two ruffians, to murder him in the forest of Fontainbleau. As *all* Fleetwood's servants were in Gifford's pay, they saw this transaction take place without interference—a circumstance which struck

struck their master so forcibly, that, while the ruffians were dragging him into the wood, he was considering whether it be one of the effects of wealth, that with it we engage persons in our service to murder us. The solution of this problem, as well as the consummation, of Gifford's crime, is interrupted by the arrival of some horsemen, who rescue Fleetwood, and make the assailants prisoners. That Kenrick was his preserver will be readily anticipated by all who are acquainted with the good old beaten track of novels on these occasions; and to do Mr. Godwin justice, he has seldom taken a by-path from one end of this performance to the other. Gifford is consigned to the gallows, which he had merited; the clouds of jealousy, which had obscured the mind of Fleetwood, are gradually dispelled; every suspicious circumstance is accounted for; and after some hesitation (very natural, we think) on the part of Mary, she is again united to the Man of Feeling.

Having occupied so much room in detailing the story, we have but little left for animadversion. The incidents during the two first volumes; are chiefly those of the common life of a man of fashion; and all that is remarkable in the tale is the laboured extravagance of sentiment which is attached to these ordinary occurrences. There is no attempt to describe the minuter and finer shades of feeling; none of that high finishing of description, by which the most ordinary incidents are rendered interesting: on the contrary, the effect is always sought to be brought out by the application of the inflated language of high passion. It is no doubt true, that a man of sensibility will be deeply affected by what appears trifling to the rest of mankind; a scene of distress or of pleasure will make a deeper impression upon him than upon another; and it is precisely in this respect that he differs from the rest of mankind. But a man who is transported with rage, with despair, with anger, and all the furious impulses of passion, upon the most common occurrences of life, is not a man of sentiment, but a madman; and, far from sympathizing with his feelings, we are only surprised at his having the liberty of indulging them beyond the precincts of Bedlam.

In the third volume, something of a regular story commences, and the attention of the reader becomes fixed by the narrative. But the unnatural atrocity of Gifford, and the inadequate means by which he is so nearly successful, render this part of the tale rather improbable. The credulity of Fleetwood is unnecessarily excessive, and might have been avoided by a more artful management of incident.

But we have another and a more heavy objection to him, considered as a man of feeling. We have been accustomed to associate with our ideas of this character the amiable virtues of a Harley, feeling

feeling deeply the distresses of others, and patient, though not insensible, of his own. But Fleetwood, through the whole three volumes which bare his name, feels absolutely and exclusively for one individual, and that individual is Fleetwood himself. Indeed he is at great pains, in various places, to tell us that he had been uncontrolled in his youth, was little accustomed to contradiction, and could not brook any thing which interfered either with his established habits, or the dispositions of the moment. Accordingly, his despair for the loss of his two French mistresses, is the despair of a man who looses something which he thinks necessary to his happiness, and in a way not very soothing to his feelings: But as we understand him, he can no more be properly said to be in love with either of these fair ladies, than a hungry man, according to Fielding's comparison, can be said to be in love with a shoulder of Welsh mutton. In like manner, his pursuit after happiness, through various scenes, is uniformly directed by the narrow principle of self-gratification; there is no aspiration towards promoting the public advantage, or the happiness of individuals; Mr. Fleetwood moves calmly forward in quest of what may make Mr. Fleetwood happy; and, like all other egotists of this class, he providentially misses his aim. But it is chiefly in the wedded state that his irritable and selfish habits are most completely depicted. With every tie, moral and divine, which can bind a man to the object of his choice, or which could withhold him from acts of unkindness or cruelty, he commences and carries on a regular system for subjecting all her pleasures to the control of his own; and every attempt on her part to free herself from this constraint, produces such scenes of furious tyranny, as at the beginning nearly urge her to distraction, and finally drive her an outcast from society. In short, the new Man of Feeling, in his calm moments a determined egotist, is, in his state of irritation, a frantic madman, who plays on a barrel-organ at a puppet-show till he and the wooden dramatis personæ are all possessed by the foul fiend Hibbertigibbet, who presides over *mopping* and *mowing*. We close the book with the painful reflection, that Mary is once more subjected to his tyranny; and our only hope is, that a certain Mr. Scarborough, a very peremptory and overbearing person, who assists at the denouement, may, in case of need, be a good hand at putting on a strait waiscoat.

ART. XVI. *Ancient and Modern Malta: containing a Description of the Ports and Cities of the Islands of Malta and Goza: the History of the Knights of St. John of Jerusalem; and a particular Account of the Events which preceded and attended its Capture by the French, and its Conquest by the English.* By Louis de Boisgelin, Knight of Malta. 3 vols. 4to. G. & J. Robinson, London. 1804.

IN order to form a proper estimate of the importance of the island of Malta in the present crisis of European affairs, it is necessary to consider the wide field of action which the Mediterranean presents to the ambition of the present Ruler of France. Had his darling system of aggrandizement been somewhat more equivocal, had he even availed himself of common diplomatic address in masking the designs he had in view, the '*miserable rock*.' which he has himself taught us to appreciate, might now have been instrumental in forwarding those plans which, we trust, it will long enable us to baffle. But scarcely was the ratification of the treaty of Amiens exchanged, before the whole of his alarming system became visible. The unwarrantable acquisition of territory on the continent, the insulting report of Sebastiani's mission, and his own barefaced avowal to the British Ambassador, clearly evinced, that his extreme anxiety to dispossess us of this post, previous even to the fulfilment of certain preliminary stipulations, arose from another motive than the mere desire of executing the tenth article of the treaty.

With respect to the stipulation which provided for the re-establishment of the ancient government, it was evident, that under the existing circumstances it could not possibly take effect; for the resources of the Order, almost annihilated by the alienation of its continental estates, were totally inadequate to the support of such an establishment; the Knights had lost (if, indeed, they ever possessed) the confidence of the Maltese; and even if these formidable objections had been obviated, an insurmountable bar still remained, in a want of security for the future independence of the island. Whilst his Consular Majesty was imperiously demanding the execution of the 'treaty of Amiens, the whole treaty of Amiens, and nothing but the treaty of Amiens,' he forgot, or at least did not choose to remember, that he required what it was not possible for Britain to grant; for there were certain powers called upon, in terms of the treaty, to guarantee the tenth article. Of these, some, it is true, nominally acceded to the measure; but they did so at the very moment when they were appropriating those estates without which the Order of St. John could not possibly

sibly subsist; and Russia, the greatest of them all, positively refused to accede to the proposal, except upon conditions totally inconsistent with the letter and the spirit of the article. Under these circumstances, had Great Britain consented to evacuate the island, what would have been the probable consequences? Excluded for ever from the Mediterranean, we should soon have heard, with unavailing regret, of our faithful ally the king of Naples being superseded in the throne of the Two Sicilies by some member of the new royal family of France. Deprived of the means of exercising any effectual interference, Britain must have remained a quiet spectator of the dismemberment and partition of the Turkish empire, the colonization of Egypt, and the subjugation of Barbary. Amidst the ardour of conquest, France would not have overlooked the opportunity afforded her of acquiring consequence as a maritime power. Her monopoly of the Levant trade would have afforded a constant supply of seamen; and the Toulon fleet, no longer overawed by the detested presence of a Nelson, might have cruised unmolested from the Straits of Gibraltar to the banks of the Black Sea. It may be said, indeed, that the jealousy of Russia would not have permitted her to remain a quiet spectator of all those usurpations; and the observation is probably just; but the mutual interest of the two powers might have dictated an arrangement by no means favourable to the general interests of Europe. Without speculating on the probable consequences of an attack upon our East-India possessions from the side of Egypt, we conceive that our mercantile and colonial interests would have had sufficient ground of alarm in witnessing either or both of the above enterprising powers exclusively possessed of the fertile shores of Egypt, Barbary, and the Morea.

In whatever light we view Malta, its value to this country cannot be too highly appreciated. As a military post, affording us the probable means of watching and defeating the designs of France, it is, at this period, inestimable; and as a commercial station, calculated to facilitate our intercourse with the Levant and Black Sea, it possesses every advantage; for where can a more desirable situation be imagined for a depot, than an island placed in the centre of the Mediterranean, containing safe and capacious harbours, and possessing the most complete lazaretto in Europe?

Mons. de Boisgelin indeed regards this island in a very different light. In his estimation, it is no otherwise important than as it is connected with the order to which he belongs. Like a true Knight of Malta, he labours to prove, that the age of chivalry is *not* gone; or, to use his own words, 'that the Order of Malta has for years past distinguished itself for piety and military exploits in as illustrious a manner as during the most renowned

ages of ancient chivalry.' Making every allowance for the prejudices of the author, we cannot conceive any thing more absurd, than his continued attempt to prove, throughout a work unwarrantably swelled out to three quarto volumes, that the abolition of the order will be a real detriment to the interests of religion and humanity; and that its restoration is indispensably necessary to the happiness of the Maltese, who cannot possibly exist under any other government. Postponing, however, the consideration of this singular institution, we proceed to lay before our readers a short abstract of that part of the work which more immediately relates to the island.

Malta is sixty miles in circumference, twenty long, and twelve broad. It is mentioned by Homer in his Odyssey, under the name of Hyperia, and was originally inhabited, according to fabulous history, by a race of giants. About 1519 years before Christ, the Phœnicians, conceiving that it might be rendered a useful commercial station, seized upon the island, and established a colony on its shores. In process of time, it was taken possession of by the Greeks, from whom it passed successively into the hands of the Carthaginians, Romans, Vandals and Goths, Arabs, Normans, Germans, French, and Spaniards, with whom it remained until the year 1530. At that period, the Emperor Charles V. ceded the perpetual sovereignty of Malta, and its dependencies, together with the city of Tripoli, to the Knights Hospitallers of St. John of Jerusalem, who, having been expelled from Rhodes by the Turks, were at this time wandering over the Mediterranean in quest of an asylum. The reasons which induced Charles to adopt this measure are thus stated by the author.

'This politic prince, whose prudence equalled his activity, considered these possessions in a very different light from his predecessors, who had ever regarded them as of small importance to their dominions. —To command the Mediterranean, to secure the coast of Sicily, to threaten that of Africa, and to interrupt at pleasure all commercial intercourse between the two seas, in the centre of which they were placed, were objects of sufficient importance for Charles to be well aware of the great advantage of possessing these two islands. His policy alone would have induced him to profit by such a circumstance; but his foresight extended still further: for, fearing these important places might, in future, be taken from his successors, who, being obliged to attend to the centre of their dominions, or to the opposite confines, might not be able to keep a force sufficient for the defence of Malta and Goza; and, at the same time, reflecting of what importance such a conquest would be to his enemies in the political balance of Europe; he determined to place them in the hands of some power, which would be particularly interested in preserving them, and which, without being able to annoy any other state, would be respected by all. Added

Added to these considerations, he found it very advantageous to save the expense of 340,000 French livres, which his treasury was obliged to furnish for the maintenance of the different garrisons it was necessary to keep in the forts and castles of Malta, Goza, &c. He in consequence made choice of the order of St. John of Jerusalem, which, having been driven from its principal place of residence, had been wandering on the coast of Italy.'

The author having examined the different monuments of antiquity, which he illustrates by plates, proceeds to a topographical description of the islands. Malta at present contains two cities, and twenty-two *casals* or villages. Valletta, the present seat of government, so called from the celebrated Jean de la Vallette, its founder, was built after the memorable siege of St. Elmo. It is situate on a peninsula formed by two admirable harbours, one of which is exclusively appropriated to a quarantine establishment, on a very extensive scale. The town and harbours are defended by the most stupendous fortifications, of which a very faint idea is conveyed by the indifferent plates accompanying the author's description. Yet, to the eternal disgrace of the Knights of St. John, these fortifications, calculated, as we know by experience, to resist every thing but famine, were, in 1798, surrendered without even the shadow of resistance. Whether the French owed their success on this occasion to the imbecility of the government, or to the treachery of certain individuals of the order, the conclusion is the same, that the Knights of Malta are unworthy of being again entrusted with so valuable a deposit.

Valletta is distinguished by a general air of regularity and grandeur, and by the number and magnificence of its public buildings. Of these the most remarkable are the palace of the Grand Master, the hotels of the different languages which composed the Order, the library, the hospitals, and the church of St. John. The magnificent ornaments which adorn the latter are minutely described. 'None of these, however,' says the author, 'were spared by the French; who, from the first moment of their arrival, began to carry away, during the night, every thing made of gold or silver, in order to convert them into ingots.'

Amongst the paintings which adorn this church, is noticed the celebrated altar-piece of Michael Angelo Caravaggio; but we are surprised that the industrious author omits a very curious anecdote connected with it, which is related in the life of that artist. It is said, that whilst Caravaggio was pursuing his studies in Italy, he happened to quarrel with a person of some distinction, who availed himself of the superiority of his rank to evade the challenge of the painter. Quitting the place, Caravaggio

gio took a voyage to Malta, where he remained a considerable time, and ingratiated himself so much with the Knights, as to obtain permission to wear the badge of the Order, or, in other words, to be admitted a '*Chevalier de Grace.*' In gratitude for this favour, Caravaggio presented his benefactors with the picture in question, the subject of which is the beheading of St. John. It is added, that Caravaggio, on his return to Italy, renewed the challenge, and fought and conquered his antagonist, who had now no excuse to urge for refusing to meet him.

In concluding his description of Valletta, Mr. Boisgelin introduces a passage which not only betrays his own ignorance in regard to the present state of the island, but is calculated to mislead the reader.

'It is as yet impossible to say, with any degree of certainty, what still remains of the different monuments of the arts in the city Valletta; though it is but too well known, that every article in gold and silver has been carried off from the churches, and the ancient municipal government suppressed, though so essential to the preservation of the inhabitants, that it would have been infinitely more prudent to have permitted it to have remained in its original form.'

We are unwilling to accuse the author of studious misrepresentation, but we cannot acquit him of very culpable negligence. In a work published under British auspices, and dedicated to the British navy, the reader has a right to expect accurate information in relation to the present state of the island of Malta. If the republican army was guilty of excesses, it is well known, that for the space of nearly four years preceding the publication of this book, Malta and its dependencies had remained under English protection; and during that time the natives not only enjoyed the full and undisturbed exercise of their religion and laws, but attained a degree of consequence in society which they never before held, and which must have rendered them very unfit for returning under the yoke of their former government. We can assert from our own knowledge, that every usage has been observed, and every prejudice humoured, with the most scrupulous exactness; and if any change has been effected in the administration of the civil government, it consists in the admission of the Maltese to many privileges, from which, under the government of the Knights, they were uniformly excluded. In asserting that our countrymen have adopted a very different line of conduct from the French, we do not mean to pronounce an eulogium on British forbearance, but merely to give our readers that information which M. de Boisgelin has withheld, and to guard them against insinuations which occur in more places than one.

Citta

Citta Vecchia, or, as it is styled throughout this work, the 'Old City,' was formerly the capital and is still the seat of the bishopric. The cathedral is a handsome building, and contains some good paintings by Matthias Preti, commonly surnamed '*Calabrese.*' The catacombs in the neighbourhood of the town are very extensive, and branch out into streets in all directions. It is supposed that they were originally intended for sepulchres; but it appears that the inhabitants have frequently taken refuge in them upon occasion of persecution or invasion.

The face of the country presents little variety, and the casals do not abound in objects of curiosity. In making the tour of the island, we observe several bays, the most remarkable of which are those of St. Paul, so named from its being supposed to be the place where the apostle suffered shipwreck; and of Marsasuiocco, where the Turks first effected a landing in 1565. As the island is accessible on all sides except from the south, where the rocks are extremely steep and rugged, armed towers have been erected at convenient distances; and a singular mode of defence (which, by the way, our author has quite overlooked) has been adopted in those parts where an enemy might most easily disembark. We allude to the stone mortars which are hewn out of the solid rock, and which, after being properly charged with powder, are calculated to convey the loose stones, or other substances with which they may be filled, to the distance of nearly half a league. Were such a discharge to take effect, it might certainly do great execution in sinking boats, and otherwise annoying the enemy; but no great damage can be apprehended from a mortar which can, of course, bear only upon one point.

The island of Goza is separated from Malta by a narrow passage, somewhat more than a league in breadth, in the middle of which is situated the small uninhabited island of Comino. Goza is about twelve miles in length, and six in breadth. It contains only one town, called Rabbato, where the governor resides, and six casals. The only fortress of any consequence in the interior of the island is that of Rabbato; and the principal landing-place (for there is no harbour) is protected by Fort Chambray, which is so named from an individual of the Order, at whose expense it was begun. The coast is surrounded with towers, which, in case of alarm, can readily communicate with those of Malta. The soil of Goza is, in general, deeper and more productive than that of Malta, and the face of the country wears a more pleasing aspect. Of the natural productions of this island, the most remarkable is a plant known by the name of *Fungus Melitensis*, which was formerly held in such estimation, on account of its medicinal qualities, that the Grand Masters reserved to themselves the exclusive

clusive privilege of collecting it. It is chiefly found on a small rock, at the distance of forty or fifty fathoms from the shore, which is accessible only by means of ropes, to which a small tub is attached. This plant, which is bissexual, of the class *monoecia monandria*, appears in December and January, and arrives at maturity in April. It is said to have been used with success in cases of dysentery, hemorrhages, and other disorders in which styptics are required; but its efficacy has not been proved to be such as to supersede the use of more common remedies.

The fifth chapter contains an amusing, and, upon the whole, a pretty just description of the Maltese, their dress, ancient customs, &c. The author does not draw a very flattering picture of the natives, whom he describes as short, strong, plump, with curled hair, flat noses, turned-up lips, and resembling in colour the inhabitants of the States of Barbary. He admits that they are industrious, active, faithful, economical, courageous, and excellent sailors; but accuses them of being mercenary, passionate, jealous, vindictive, and addicted to thieving. The language of Malta is a corrupt dialect of the Arabic, with a considerable admixture of Italian and other languages; and though it is probable that the Arabic alphabet was formerly in use there, it is now completely forgotten. Those, therefore, who attempt to write the language, are obliged to have recourse to the European character, and to express, as nearly as possible, the pronunciation of the word employed. As the Italian, however, is now generally understood, the business of the island is conducted through the medium of that language. It has been supposed, that the principles of the ancient Punic might still be found in the Patois of Malta; but it does not appear that the latter has afforded any assistance in deciphering the Phœnician inscriptions on the different monuments and medals found in the island.

The following extract, relative to the soil, culture, and productions of Malta, will, we conceive, be interesting to our readers. The author, who borrows very liberally from a little French work, entitled, 'Malte, par un Voyageur François,' has, in this instance, translated the passage *verbatim*.

'The ground in Malta is never suffered to remain uncultivated, but constantly sown every year. Each season yields its peculiar crop, and the produce is very abundant. The ground, in land of a middling quality, yields from sixteen to twenty for one; whilst that on good land affords thirty-eight, and on rich spots sixty-four. The island of Sicily is by no means equally fertile.

'The colour of the soil varies in the different districts of Malta, and it is seldom more than one foot deep above the surface of the rock. It is irrigated chiefly by the night dew; but the rock being porous, retains the damp, and keeps the ground constantly fresh. The earth is always removed

moved once in ten years, in order to clear the rock of a thick crust, which forms, and prevents the moisture from sufficiently penetrating. When the ground is properly prepared, it produces the first year, water melons and garden plants; the next, an excellent fruit, which is preserved during the winter, and distinguished by the name of Maltese melons; and afterwards, barley, the straw of which furnishes fodder for the cattle. The ground is ploughed the third year, and planted with cotton, and the fourth sown with corn. The land afterwards yields these different crops alternately; but care is always taken to prepare the ground, particularly the year the cotton tree is to come into bearing, when it is necessary to reduce the earth into a kind of powder.

'Three species of cotton are cultivated in Malta; one natural to the country, another from Siam, and the third of a cinnamon colour, called Antilles cotton. These are all sown in the month of April, and the top of the plant is cut in the beginning of September, that the fruit may grow larger. It is gathered in October, when it begins to open, which is a sign that it is then sufficiently ripe. It is sown in the following manner: A hole some inches deep is made in the ground, which is afterwards filled with water, and when it is sufficiently soaked, the seed is put into it, and covered over, without being watered again till it begins to shoot out of the ground. The plant presently grows to the height of from ten to fifteen inches, and blooms in the month of August.

'Wheat is sown in November, after the ground has been ploughed three times, and cut in the beginning of June: barley likewise is sown in the former month, and reaped in May. There is a kind of corn in Malta, called *Tommon*, which grows in poor land; and the bread made of the flour is particularly white. This grain is sown in February.

'Each field is enclosed with walls, to shelter the different plants from the effects of the wind, rains, and storms, during the spring and autumn.

'Necessity, the parent of industry, has taught the Maltese to make a sort of artificial land in the barren parts of the island. They begin by levelling the rock; which, however, they allow to incline a little, that all superabundant water may run off. They then heap together some stones broken into small pieces of an irregular form, which they place about a foot high, and cover with a bed of the same stones nearly reduced to powder. On this, they first place a bed of earth, brought either from other parts of the island, or taken out of the clefts of the rocks; then a bed of dung, and afterwards a second bed of earth.—Such, indeed, is the perseverance of the proprietors of this ground, that it becomes in time equally fertile with natural land.

'Malta and Goza produce fruits of exquisite flavour, excellent roots, and very fine flowers; the roses in particular are much sweeter scented than in any other country. These islands likewise yield great quantities of *comino*, *aniseed*, *kalimagnum*, *loricella*, *silla*, and *lichen*: this last plant grows on the rocks exposed to the north, and is used for dying the amaranthus colour. *Silla* is peculiar to Malta and Goza, and

and is of better quality in the last mentioned island. This plant grows to the height of five feet, and bears a red flower. Tournefort calls it *hedysarum clypeatum flore suaviter rubente.* It serves for fodder, is sown in June, and mowed in May. The same ground is afterwards filled with corn, and the following year the silla comes up again of itself; it likewise shoots out the third year, but has then lost all strength and quality.'

The chief articles of exportation are, cotton thread, cummin seed, barilla ashes, wrought stones for pavement, oranges of an excellent quality, orange-flower water, salt, and honey; to these may be added gold chains and fillagree, in the manufacture of which they are only excelled by the Venetians and Portuguese. The only other branch of manufacture established at Malta, is that of a cotton stuff, which is used by the peasantry for clothing.

The breed of dogs, for which Malta was remarkable even in the time of the Romans, is now almost extinct: they are of an extremely diminutive size, but well proportioned, and covered with long silky hair. The asses reared in the island are remarkable for strength and beauty: of these several have of late been imported to Britain; a circumstance which has tended so much to increase the price of these animals at Malta, that no less a sum than 35*l.* Sterling has been known to be paid for one jack-ass.

As a great proportion of Malta and Goza is unproductive, and of that which is cultivated a considerable part is employed in the rearing of cotton, these islands do not produce much more than one fourth part of the corn consumed by their numerous inhabitants. Supplies are therefore from time to time derived from Sicily, the coast of Barbary, and other parts of the Mediterranean. Under the government of the Order, and even prior to its establishment at Malta, it was thought expedient to provide against the inconveniences which might arise from trusting to casual supplies. All private traffic in corn was therefore prohibited, and certain magistrates styled *Jurats*, were exclusively charged with the purchase of grain for the consumption of the whole island, who sold it out to the inhabitants at a stated price. The grain was preserved in large pits dug in the rock, with beds of wood and straw, on which it was spread. When these were filled, they were closed by a large stone, which was plastered over with puzzolana; and the air being thus excluded, the corn might be preserved for a great length of time. The author probably does not know, that under the present government it has been found an expedient, and even a popular measure, to continue this mode of supply. The price at which the inhabitants are furnished with corn is, on the average, considerably less than the retail price in Sicily

Sicily and Italy; and if the government occasionally sustain a loss by the transaction, it is compensated by a correspondent gain in plentiful years, though, upon the whole, a small profit is derived, whilst the people are certain of being supplied at a moderate price.

M. de Boisgelin argues in favour of the mildness of the government of the Knights, from the great increase of population since the period of their arrival in 1530, to that of their departure in 1798. According to his statement, the number at the former period did not exceed 15,000, whereas at the latter it exceeded 100,000. The increase, we admit, is immense; but other causes may be assigned, besides the mildness and generosity of the government. A constant succession of upwards of 500 rich individuals, from almost every Roman Catholic country in Europe, must necessarily have attracted a vast number of retainers and followers; and adventurers from different parts of the Mediterranean were no doubt, induced, by the hope of plunder, to embark on board the gallies of the Order. But the author himself, in a former part of the work, assigns a better reason than mere conjecture. 'The Maltese,' says he, 'are remarkably sober; a clove of garlic, or an onion, anchovies dipped in oil, and salt fish, being their usual diet.' If, as the author asserts, the Knights of Malta expended large sums gratuitously in support of this overgrown population, we cannot help thinking, that their generosity would have been much more usefully employed in encouraging commerce and manufactures, and in improving the face of a country where much remains to be done. If we were to argue from the proportion of population alone, we must infer, that the government of Naples is greatly milder than that of great Britain, and that the Chinese enjoy the mildest government in the world. But if the Maltese really enjoyed more happiness under the Order than they can possibly expect under any other government, they have proved themselves either blind to their own interest, or the most ungrateful people upon earth; for it is well known, that at a period when active measures were taken for the restitution of the island to the Knights of St. John, the great bulk of the people, so far from testifying their joy, deprecated the return of the Order as the greatest of possible calamities.

The following observations relative to the climate of Malta are the result of experiments made by the celebrated naturalist Dolomieu, whom the author describes as a very learned man, much more remarkable for his great knowledge, than for his attachment to the Order.

'Reaumur's thermometer in Malta, during the summer, is generally below 25 degrees, and scarcely ever above 28. In winter, it is very seldom

seldom lower than 8 degrees below* the freezing point. Heat and cold are not most felt when the thermometer is at either of the two extreme points of our temperature: for there is an almost constant contrast between our sensations and the instruments which measure the true temperature of the air, between sensible and real heat.

'The different directions of the wind produce an instantaneous change from cold to heat and from heat to cold. North or north west winds always occasion cold; and a south wind constantly brings heat. The violence with which they blow modifies the sensations they cause; and those produced by these winds become still stronger, because the atmosphere they put in motion is analogous to what we feel from real heat and extreme cold.

'A north-west wind purifies the air in the greatest degree; a north-east wind is not quite so pure; and it becomes infinitely less so when it changes to the south-east, or the south; but it grows rather better when it veers to the south-west, particularly if the sea be much agitated. The north-west wind is purified by the vast expanse of sea which it passes over; but the north wind would suffer some degree of alteration from Italy and Sicily, if the great vegetation in those fine countries did not tend to purify the atmosphere.

'When the wind changes to the south, it becomes dangerous, owing to its having passed over the barren burning continent of Africa, where there is scarcely any vegetation, and where the heat is so intense that every thing susceptible of rarefication in the earth produces exhalations which enter into the atmosphere. It is not purified by passing over the sea, because the channel is narrow, and being sheltered by the land, the water is not sufficiently agitated to absorb by its motion the mephitic miasmata with which the air is impregnated.

'The extreme cold during winter is produced by the pure air which blows from the north. The winds act upon us by their great violence, which continually renews the volume of air that surrounds us. The cold thus produced is easily avoided, by not exposing ourselves to the constant currents of air and violence of the wind.

'In summer, when the wind blows from the south-east, the usual purity of the air is so greatly altered, that were it to change a few degrees more, it would be impossible to breathe; and the insensible perspiration of the body would form so thick an atmosphere, that suffocation must infallibly ensue. The south winds never blow long at a time, seldom lasting more than three or four days. They are frequently succeeded by a calm, during which the heat is also very great, but much less oppressive and suffocating, though the thermometer frequently shows a much higher degree of real heat. The air is then infinitely more pure; and the sea-breezes during the night, and indeed some part of the day, greatly refresh the atmosphere. This air is purified by passing over the water, which it gently agitates. There is also

* The translator of this passage is certainly egregiously wrong. The words of Dolomieu are, 'L'hiver, il est très rarement au dessous de 8 degrés *sur* la point de congelation.'

also a morning land breeze, which, though less pure, cools the air in some degree.

'When the wind changes suddenly from the south to the north, we feel an astonishing lightness, our sensations are inexpressibly pleasant, and we breathe with the greatest freedom. It is a certain fact, that on these occasions, the air becomes 20 or 25 degrees more pure, though there is no variation in the thermometer.

'Nothing is more salutary during the Sirocco than iced beverages; they revive the spirits, strengthen the body, and assist digestion. Snow is therefore considered at Malta as one of the first necessaries of life. It is brought from Sicily, and administered to the sick. Whenever there is a scarcity of this article, all that remains in the ice-houses is entirely reserved for the use of the hospitals.

'There is another method much in vogue among the young Maltese who, in order to guard against the ill effects of the Sirocco, plunge into water, and come out by degrees, without drying themselves, that the humidity on the skin may evaporate, by which means the vapour carries off not only some part of the heat of the body, (it being an excellent conductor,) but at the same time the miasmata of our insensible perspiration.'

The first part of the work concludes with the natural history of the island, a catalogue of the plants, and a long dissertation on the propagation of the fig-tree.

The second, and by much the larger division of this work, relates chiefly to the constitution and history of the Order of St. John.

It is certainly a most extraordinary fact, that, at the end of the eighteenth century, there should still exist a society of men, whose members uniting the most discordant characters, professed at once to adopt the austerities of a religious order, and to wage perpetual war with the enemies of the Christian faith. Yet such was the Order of St. John of Jerusalem, which, of all the institutions to which the crusades have given rise, exhibited the most heterogeneous mixture of Christian humility and temporal pride; —the most singular attempt to reconcile the possession of rich benefices and luxurious indulgences, with vows of poverty and professions of self-denial.

As the eloquent Vertot had so ably preceded M. de Boisgelin in the history of this pious fraternity, we cannot help thinking that the latter would have performed a more essential service to his Order, as well as to the public, had he referred the reader to a work infinitely better calculated than the present to impress the mind with exalted ideas of the piety and valour of the Knights of Malta. It is true that Vertot does not bring down the history of the Order to the present day; he concludes in good time: but, had he been now alive, we scarcely think he would have rivalled our author in his

his attempt to rescue the Knights of the 18th century from the imputation of degeneracy; at least we may venture to say, that, with all his ingenuity, he would not have been more successful. But a description of the siege of St. Elmo is an excellent *item* in the composition of a book; and the chevalier will pardon us for suspecting, that some motive, less disinterested than his concern for the glory of the Order, may have induced him to extend a work to three quarto volumes, the whole information of which might have been comprised in a moderate *octavo*. To such of our readers as have not had occasion to consider the constitution of the Order of Malta, the following summary abstract may not be unacceptable.

This Order was instituted about the end of the eleventh century, and was originally composed of a few charitable individuals, who established a house at Jerusalem for the reception of the sick and wounded crusaders. This society having expressed a desire to adopt a regular habit, the Pope invested them with that of St. Augustin; and from that time their successors have been required to take the vows of chasity, obedience, and poverty. At this period the members of the society were styled 'Hospitallers Brothers of St. John the Baptist of Jerusalem.' Extending their cares beyond the mere recovery of their distressed guests, they soon obtained permission to take up arms, in order to defend them from the infidels, in their journey to the nearest port, whence they might embark for Europe. Upon this occasion they took an oath, before the Patriarch of Constantinople, 'to defend the holy sepulchre to the last drop of their blood, and to combat the infidels wherever they should meet them.' The Order having thus become military, increased both in numbers and importance; and received large donations and bequests from almost every country in Christendom. In process of time, the Knights agreed to divide themselves into seven different languages, of which the three first were French, viz. those of Provence, Auvergne, and France; the four others were those of Italy, Arragon, England, and Germany. The language of Castile was afterwards added; and that of England, abolished at the Reformation, was afterwards replaced by the Anglo-Bavarian.

The Order was divided into three classes. The first consisted solely of such persons as could bring indubitable proofs of their descent from noble ancestors. The Knights of this class, called '*Chevaliers de Justice*,' enjoyed the rich commanderies, and other valuable pieces of preferment: from amongst their number the Grand Masters were necessarily elected; and in them, indeed, was vested the whole authority of the Order.—The second class comprehended the Priests of the Order, some of whom were required

quired to officiate in the conventual church, whilst others were called upon to attend as chaplains in the galleys, or to reside on the benefices in the different priories scattered over the Continent From this class were elected the Bishop of Malta and the Prior of the Conventual Church of St. John, who were next in rank to the Grand Master or his Vicegerent.—The members of the third class were styled '*Servans d'armes*,' and seem to have come under the description of 'Squires.' They were required to attend the Knights both in the hospital and in their caravans or expeditions against the infidels. The two last mentioned classes, though not required to be noble, were obliged to prove that they were born of respectable parents, who had never been in servitude, or followed any low art or trade. They enjoyed certain commanderies of smaller value, and had equally the privilege of voting at the election of a Grand Master with the Knights of the first class.

For some time after the institution of the Order, no formal proof was required to establish the pretensions of candidates to the claim of nobility: nothing further was, in general, deemed necessary than the names of their father and mother, the purity of whose blood was seldom called in question. But when the intermarriages of nobles with plebeians became more frequent, the Knights of St. John, jealous of the purity of their Order, instituted certain forms to ascertain the legitimacy and descent of their candidates. These consisted of oral testimony, the examination of charters and title-deeds, and other modes of investigation.

Different degrees of proof were required by the several languages, as well as different degrees of antiquity. For example, a Knight of the Italian language was required to establish the nobility of his father and mother, grandfather and grandmother, or, (to use the technical phrase,) to prove four quarters: but for each of these quarters two hundred years of nobility were necessary.—The candidate for admission to the language of Germany was required to prove sixteen quarters! When the different proofs of nobility were established, the candidate might be admitted at different ages. His residence at Malta was seldom required before the age of twenty, and was frequently dispensed with for a year or two more. During his noviciate, the candidate was required to serve in the galleys during four expeditions or *caravans* against the infidels; and at the expiry of that term of probation his profession took place; a ceremony which was attended with great parade and solemnity. The form of admission is detailed with great precision at p. 222. of the second volume.

The author concludes his work with an account of the manner in which the island was delivered up to the French army in 1798; examines

examines the causes which occasioned the revolt of the Maltese; and details the particulars of the blockade and surrender of Malta Great Britain.

It is singular enough, that whilst he enumerates the excesses committed by the French army, such as the plunder of their churches, the impressing and carrying off to Egypt numbers of the inhabitants to serve in the army and navy, &c. he enters (p. 82.) into a formal vindication of their Commander in Chief.—This is the only part of the work where we have met with the name of Bonaparte, and it is mentioned with respect.—Does this proceed from the excess of the chevalier's charity and forgiveness? or does he look for the restoration of his Order to the person who overthrew it?

Such are the outlines of M. de Boisgelin's book. If, from the nature of the work, we did not expect much originality, we at least hoped for a perspicuous arrangement of facts. But, even as a compilation, this book is destitute of merit; and throughout we meet with numberless passages of considerable length, which are literally transcribed from the authorities. The little work entitled, '*Malte, par un Voyageur François*,' is completely incoporated in the first part of the work: and *Malta illustrata*, and *Vertot*, have afforded the chevalier many passages.

We have already said, that the essential information contained in the work might have been comprised in one octavo volume; but we may safely add, that the work, as it now stands, when stripped of its appendix, its pompous catalogue of authorities, and other useless *et cæteras*, would have exceeded the bounds of one moderate quarto. The chart of the islands is absurdly large. Had it been executed on a scale of one tenth of its present size, it would have answered the purpose equally well, without unnecessarily swelling the first volume to an inconvenient bulk. The subjects of the plates are in general ill chosen, and very badly executed. The costumes of the inhabitants, and views of the island, would have been more interesting to the reader than portraits of the Grand Masters. The only original thing in the book, and almost the only amusing one, is the author's zeal for his Order, and his anxiety that the island should be restored to it. Is it possible that any man of common sense should fail to see, that the institution has already outlived its utility, and is daily becoming ridiculous? It would not be more absurd, to give an island to a lodge of Free Masons, than to such a corporation as the Knights of Malta.

Art.

ART. XVII. *The History of France from the time of its Conquest by Clovis, A. D.* 486. By the Rev. Alexander Ranken, D. D. one of the ministers of Glasgow. Vol. 1. 2. & 3. London, Cadell & Davies. 1801, 1802, and 1804.

THOUGH the records of every man's own country are those which he reads with most curiosity and delight; yet, considering the matter as citizens of the world, and divesting ourselves of local partialities, we cannot conceive that the history of any European nation can enter into competition, in point of interest and importance, with that of France. If we look at the other states of the Continent, some of them have come into the vineyard, as it were, at the eleventh hour, and were barbarians but the other day; some again have long ago run out their race of fame, and protracted from age to age an existence of gradual decay; some have never cultivated letters, and others never been great in arms; some have been too miserable to produce legislators, and others too happy to breed heroes; some have had meagre annalists to chronicle great exploits, and others great historians to record their petty transactions. But, as the duration of the French empire for thirteen centuries far transcends the credible history of any other state, so, the events by which that period is filled up, are more various and important, have been related by more numerous and agreeable writers, and given scope to the talents and virtues of more distinguished men, than any other; while the subject presents a still more interesting spectacle to the British philosopher, as the source from which much of our polity and jurisprudence, much of our literature, and almost the whole of our system of manners, has been derived. No man can set up a claim to the title of a literary or philosophical antiquarian, who has not drank pretty largely from the copious stream of French history; a stream so copious indeed, that the most diligent among the learned natives themselves, have never been able, even in its partial branches, to exhaust it; and it is certainly an undertaking of no ordinary boldness in the author of the work before us, to promise the public a history of France, comprehending not civil and military transactions alone, but the religion, jurisprudence, learning, arts, commerce, language, and customs of every age, from the invasion of Clovis. It will be readily seen, that the plan of this work corresponds with that of Dr. Henry in his History of Britain. Dr. Ranken shall speak for himself.

'Many years have elapsed since I began my inquiries into French history, and to write essays upon that subject. The plan which I pre-

ferred when I resolved to publish, required both that these essays should be considerably altered in their form, and that others more recently composed should be added; this will account for that variety which may appear in the style. The plan was not suggested by Dr. Henry's History of Great Britain; but in attempting to arrange the several essays afterwards, a similarity was observed; and, on farther deliberation, I resolved to adopt his plan, and proceed in composing what was then wanting to complete it. I admire his work, and *will* be content if I shall be thought to have successfully imitated it.'

There are three methods which an historian may pursue with respect to those great subjects, of laws, manners, and the rest, which are so much more interesting, for the most part, than a mere narrative of transactions, and for the sake of which alone, in many periods, civil transactions are worth knowing. He may interweave them with the body of his narration, either incidentally, as Herodotus, Froissart, and most writers of contemporary history have done, or by way of illustration, like the greater part of modern writers; or secondly, he may station them in preliminary books, or reserve them for appendixes, wherever they bear only a general connexion with the main body of the work, still pursuing the former method, where it is essential to discuss the causes, or elucidate the circumstances of particular events. Such is the plan of Robertson in his Charles V. and of Hume in his History of England. The arrangement of Gibbon is compounded of these two kinds, but partakes much more of the former. The third scheme of disposition is that of Henry and Dr. Ranken; in which every distinct subject forms a distinct chapter, and the corresponding chapters in each successive volume may be read as a continued independent account of the matters to which they relate.

Of these, the first is beyond comparison the most pleasing to those who read history as a source of amusement. The fatiguing monotony of battles and sieges in war, cabals and negotiations in peace, so palls upon the mind in almost every historical work, that intermingled passages, which illustrate laws, literature, or manners, show like Oases in the great desert, and afford resting-places to the weary reader, from which he may launch out again, refreshed, into the tedious wilderness which he is traversing.—These passages are in many of the best authors the more precious, that they are very rare. Man, so studious to record his crimes and his miseries, casts a careless eye, it would seem, upon the laws which protect, the arts which adorn, and the commerce which enriches him. It was not indeed till lately, that the great and leading uses of historical knowledge seem to have been well understood, or that philosophy, with Montesquieu as her high priest, taught us to consider the progress of the species, as of more importance

portance than the pedigree of kings, and commissioned those painful, though sometimes refractory drudges, the antiquarians, to labour as her pioneers in the collection of facts, which her more favoured sons must afterwards combine and generalize. Hence, in our modern histories, the subjects of which we have been speaking bear a much greater proportion to the main branch than used to be the case; and for that reason cannot so easily be incorporated with it, without distracting us by frequent transitions, losing that time which is required to recall our ideas, and bring our minds to the proper focus, and rendering it difficult either to refer to particular passages, or to study collectively any particular subject.

To this confused, immethodical disposition, the third plan, that of the work before us, is completely opposed. It seems indeed at first to be the very antipodes of confusion; every genus has its chapter, and every species its section. Yet we question whether this extreme accuracy of arrangement does not sometimes defeat itself. Many facts are to be found, of which we cannot well say whether they should be referred to the civil or ecclesiastical departments, to the history of science or of art. Thus, the disputes between Henry II. and Becket are related by Dr. Henry under the head of Religion, (vol. 3. ch. 2.)while the excommunication of Robert, King of France, A. D. 997, is placed by Dr. Ranken (vol. 3. p. 21.) in the chapter destined to Civil and Military Events. But what is more material, there is great danger that too rigorous an adherence to the systematic division may produce a jejune spiritless performance, *sine succo et sanguine*, a mere anatomy of history, more resembling the dry preciseness of an index or chronological table, than a skilful and harmonious combination of the several parts of the work. Such is, perhaps, in some degree, the case with Dr. Henry's production, but eminently so with the present history. Another objection is, that a larger field is entered upon than any one man can reasonably hope to explore; and that the writer is naturally induced, by the very disposition which he adopts, to dwell with unnecessary minuteness upon many subjects, which, as they reflect little light upon civil history, and furnish little towards philosophical views of the species, ought to be seldom and slightly noticed. Such are long details of theological schisms and heresies, which properly fall under another province, and impose a needless obligation on the writer, the fulfilment of which will perhaps excite the gratitude of few of his readers.—Such too is the history of language, a subject extremely interesting in itself, but, for the same reasons, rather injudiciously mingled with very different matter. Such, too, but much worse, is the head of Biography, which Dr. R. has introduced into his two

former volumes, but has prudently retrenched in the third. When we found seven and a half pages allotted to the life of Sidonius Apollinaris, and eleven to that of Hincmar, we trembled at the proportional extent of these articles, when Dr. R. should arrive at the tinies of Thuanus, Corneille, and Des Cartes.

The second of the three methods above pointed out is, therefore, the one which we consider as best suited to the greater part of histories. In the standard works of Hume and Robertson, while the chain of events is never broken in upon by long dissertations, the narrative is agreeably varied and perspicuously illustrated by occasional digressions; and the general views of the state of society are introduced in their proper places, without a tedious accuracy, or an attempt to exhaust materials of an indefinite extent.

After this criticism on the plan of Dr. R. it remains to see, whether he has adequately fulfilled what he has undertaken.—There are two kinds of merit to which an historian may aspire. The first and rarest, is to exhibit a luminous picture of human nature in the age and country upon which he is employed, to point out the causes and results of public transactions, to deduce principles of general policy and moral philosophy, to distinguish the effects of what may be deemed accident, from the permanent and essential operations of general causes. The second is, to accumulate facts with diligence, to select them with judgment, to sift them with impartiality, and to relate them with perspicuity. To the former of these excellences, it is perfectly evident that Dr. R. has no pretensions: he is neither a Machiavel nor a Gibbon: the statesman will not be guided by his maxims, nor the philosopher enlightened by his speculations. It would be much, however, if he had merited the praise of diligence and accuracy; we regret to say, that we have found him somewhat deficient in this respect also.

The first volume contains the History of France from Clovis to the death of Charlemagne. 'I have not attempted,' says Dr. R. in his preface, 'to carry the History of France farther back than the conquest of it by Clovis.' He has thought it necessary, however, to deviate considerably from this rule, and presents us, in almost every chapter except the first, with copious accounts, not only of Gaul, during the Roman dominion, but, as we shall see, of the Romans themselves. In the very outset we have a calculation of the populousness of ancient Gaul at the era of Cæsar's invasion. Upon this subject we had prepared some observations, which we are obliged to suppress for want of room; and can only say, that, on the whole, we consider Dr. R.'s estimate as quite hyperbolical and unfounded. If the essay of Hume had not long since convinced us, the late work of Mr. Malthus would have put it

it out of doubt, that a country which at present hardly feeds 36,000,000 in a high state of agricultural improvement, was not likely to be the abode of half that number, when it was full of morasses and forests, and when the climate, as there is reason to think, sympathised with the wildness of the soil and the rudeness of the inhabitants.

During the period comprised in this first volume, France, as is well known, was governed by the Merovingian dynasty, which expired about the middle of the eighth century, and gave way to Pepin, and his son Charlemagne. There were three-and-thirty of these monarchs, great and small, without reckoning the four from Pharamond to Clovis, who, like the four first lines of the Æneid, *Ille ego*, have a doubtful sort of claim to authenticity, and are put on or struck off according to the fancy of the author. As to their manner of life, they maintained an oriental establishment of wives and concubines, put out the eyes of their brothers and nephews when they came in their way, were very much afraid of the bishops, drove about the streets of Paris in a waggon drawn by buffaloes, trusted the management of their affairs to their Mayors of the Palace, and wore very long hair.* This singular faculty of propagating long-haired children ran in the family of Merovæus: their young Highnesses were known by it, like the Ogre's children by their crowns, or Prince Cherry and Princess Fair-star by combing pearls out of their locks. Like Sampson of old, their whole strength lay in this hair; the moment one of them was shaved there was an end of him; not a Frank had instinct enough to own such a wight for the true prince. We cannot indeed say much for the inner lining of the skull in these shepherds of the people. They acquired the name of *insensati*, *faineans*, or *fools*. This was not a libel, a pasquinade, an impertinent sally of plebeian wit. A grave chronicler, as dry as dry may be, relates this little circumstance in their characters as a matter of course. *Post Dagobertum, regnavit Daniel, clericus insensatus, frater ejus; post Chilpericum, Regem insensatum, regnavit, solo nomine, Hendericus insensatus, consanguineus ejus; post Hendericum, regnavit, solo nomine, Childericus insensatus, frater ejus.* We have

* The following account is given by Eginhard of these Merovingians. *Et opes et potentia regni penes Palatii præfectos, qui majores domûs dicebantur, et ad quos summa imperii pertinebat, tenebantur; neque regi aliud relinquebatur, quam ut regio tantum nomine contentus, crine profuso, barbâ summissâ, solio resideret, et speciem dominantis effingeret, legatos, undecunque venientes, audiret, iisque abeuntibus responsa, quæ erat edoctus, vel etiam jussus, ex suâ velut potestate, redderet. Quocunque eundem erat, carpento ibat, quod bubus junctis, bubulco rustico more agente, trahebatur.*

have heard it suggested by some learned persons, that, from the constant conjunction of long hair and folly in these Gallic potentates, mankind have, as usual, inferred the relation of cause and effect to have subsisted between them; and assuming, rather illogically, the converse of the proposition to be true, have rivetted in their minds that association of wigs and wisdom which has so greatly redounded to the glory and profit of doctors and peruke-makers.

Like the corresponding history of England during the Heptarchy, the annals of these princes are ineffably wearisome and uninstructive. Whether the Offas and the Pendas, the Chilperics and the Dagoberts, had a vice more or less, we have as little solicitude to inquire, as about any question which the busy demon of controversy can possibly suggest. The sublime Porte does not trouble itself, said the Reis Effendi to an ambassador, who communicated a victory of his masters, whether the dog beats the hog, or the hog beats the dog. We care as little, whether, in one given year during an age of anarchy, a greater number was slain in one horde of barbarians or another. These are the ups and downs of savage warfare, which are occasionally varied by the *fluctus decumani*, the grand revolutions, by which the fate of nations has been affected. We make no objection, on the whole, to the conduct of this part of the book. Dr. R. could not have been more concise without reducing the scale to that of an abridgment, and he has never been tediously diffuse. In one instance, perhaps, we could wish him to have looked a little more into the subject, indifferent as we have just professed ourselves as to individual character. We allude to that of Brunehaut, Queen of Austrasia and Burgundy, and rival of the no less notorious Fredegonde, who in the year 613, was dragged at the tail of a vicious horse, for the amusement of a humane conqueror and his polished camp. Concerning this princess the antiquaries and historians of France have been at issue for some centuries, the greater part maintaining her to have been a monster of guilt, while some espouse her defence with as much zeal as was felt by the three hundred gallant Franks, who swore, that a child, of which Fredegonde had been delivered, was the actual offspring of her husband. Dr. R. simply says, that Velly rather vindicates her character. But Velly is by no means her only panegyrist; Pasquier, Cordernoi, and several more, might have been cited on the same side; and the controversy, perhaps, deserved a note of half a page. Yet when we recollect, that some great philosophers have declared, that the dispute about the guilt of our Scotish Mary, connected as it is with so many illustrious characters, heightened by so many associations of sentiment and romantic circumstance, and embellished by such ingenuity and eloquence, has excited no curiosity in their breasts, we are half asham-

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ed to avow any solicitude about the merits of this comparatively obscure princess.

As a specimen of Dr. R.'s powers of composition, we may refer to his character of Charlemagne. It is drawn, in our judgment, without force or vivacity; and is worthy of censure also in a moral sense, for glozing over the thirst of conquest, and the licentious private life, by which that illustrious usurper of the Roman name was distinguished. Charlemagne owed more to Pepin, than Alexander to Philip, or Charles XII. to his father: not only he inherited a consolidated empire, but found the neighbouring countries half subdued. Like Alexander, too, his genius was attested, not by the permanence, but by the fall of his empire: his sceptre was two massy to be swayed by the puny hands of his children; and he stands by himself, as the sole individual, who, within the period of credible history, has united, by his own victories, three of the principal countries of Europe under his single dominion. There is a fact related by Dr. R. of Charlemagne, which is rather startling. 'The King of Persia,' says he, 'who reigned then over great part of Asia, preferred his friendship to that of any other prince or potentate, and presented him with the precious gift of the Holy Land.' Vol. i. p. 166. In another place, (vol. ii. p. 2.) he speaks of '*Aaron* King of Persia.' The original of this absurd blunder we have luckily detected (for Dr. R. is very deficient in his references) in Eginhard, (Vit. Kar. Mag. c. 16.) '*Cum Aaron Rege Persarum, qui, exceptâ Italiâ, totum pœne tenebat Orientem, talem habuit in amicitiâ concordiam, ut is gratiam ejus omnium, qui in orbe terrarum erant, regum et principum amicitiæ præponeret, solumque illum honore et munificentiâ sibi colendum judicaret. Ac proinde, cum legati ejus, quos cum donariis ad Sacratissimum Domini ac Salvatoris Mundi sepulcrum locumq. resurrectionis miserat, ad eum venissent, et ei Domini sui voluntatem indicâssent, non solum quæ petebantur fieri permisit, sed etiam sacrum illum et salutarem locum ut illius potestati ascriberetur, concessit.*' Dr. R. has not only confounded the mere site of the Holy Sepulchre with Palestine at large, which would have been a marvellous donation, but has disguised under this strange appellation *Aaron King of Persia*, the illustrious Khalif Haroun Alraschid. There is something peculiarly interesting to our minds in the esteem and courteous intercourse between these great men, who, in the zenith of religious bigotry on either side, unconnected, in the most distant possibility, by ambitious interests, separated by long tracts of sea and land, and surveying each other but in the mirror of reflected glory, still felt that there existed between them the community of transcendent merit, and the joint inheritance of that immortal renown to which no other monarch of their time was worthy to aspire.

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We shall rejoice if the extracts which, for a different reason, we have been led to make from Eginhard's life of Charlemagne, should induce any of our readers to the perusal of that work. It is written, with a few exceptions, in latinity more worthy of the first than the ninth century, and with much of that simplicity, grace, and brevity, which we admire in the Agesilaus of Xenophon, and the Lives of Cornelius Nepos.

The ecclesiastical history in the second chapter, including that of Druidism, is somewhat too long. The third chapter is the most essential of the whole first volume. It purports to contain the history of civil government, laws, and revenue, from Clovis to Charlemagne. This is the fruitful field of controversy. Every step we take is over the debateable land. The extent of royal authority,—the hereditary or elective tenure of the crown,—the nature of the irruption under Clovis—the condition of the former inhabitants under their new masters,—the equality or inequality of ranks,—the exemption from taxes,—the partition of plunder and of lands among the Franks,—the rise of the feudal system,—and the nature of the tenures which preceded it; these are the chief, but by no means the only questions which have occupied the researches of learned and zealous Frenchmen. But they are interesting, at least many of them, to us, almost as much as if we were Frenchmen. Their solution would illustrate most materially the whole history of the middle ages. There is such an affinity among the western nations of Europe, that whatever is true of one, though it will not admit an analogical inference, will very much assist our investigations with respect to another. Their jurisprudence, particularly, is of the same family features, though the Frank, the Anglo Saxon, the Lombard, and the Visigoth, have blended the general character with those distinctive peculiarities, which situation, climate, and commixture of races must always produce.

These discussions, though some of them had an earlier origin, have been particularly prosecuted since the beginning of the last century. The Jesuit Pere Daniel led the way, in the preface to his History of France, about the conclusion of Lewis XIV.'s reign. But, though far more learned than Mezerai, he does not seem to have fully anticipated all the constitutional questions which were afterwards raised; and his most eminent innovation in historical criticism, was the rejection of the four monarchs who were supposed to have preceded Clovis in a settlement on the left bank of the Rhine, in the country of Liege and Tongres, for whose existence, or, at least, for whose establishment, he endeavours to show there is no ground of belief. The Count de Boulainvilliers followed in the Memoires Historiques prefixed to his Statistical Account of France, a splendid edition of which was published at

at London in 1727, under the patronage of the royal family, and the principal *Whigs*. For it was considered as written upon principles, which at that time were fashionable in the English court, and inculcated the origination of government from the people, and the circumscription of regal prerogative. The same causes rendered this work unpopular, or at least invidious in France, and the succeeding writers seldom speak of Boulainvilliers without astonishment at his audacity and presumption.

Clovis, according to this author, was but the general of a free army, who, elected him as their leader in enterprises, the glory and profit of which was to be shared with themselves. Previously to such election, the Franks were equal and independent. What kings they had, were but civil magistrates, appointed to settle the disputes of individuals, though probably always selected from a particular family. Their leaders in war were elected indiscriminately with respect to birth, from the public confidence in their skill and valour. *Reges ex nobilitate, duces ex virtute sumant.* This distinction was preserved throughout the whole of the first race after Clovis. The civil and military authority were in separate hands,—the King, and the Mayor of the palace. The Frank, conscious of his inherent rights, looked up to the king neither for his liberty, his possessions, nor his right of dominion over the ancient inhabitants. These became subject, not to the king, except in his own share of the conquered territory, but to the proprietors of estates within which they lived. These proprietors, the Frank conquerors at large, knew of no tax or tribute, save personal service against a common foe: and claimed the equal distribution of all the spoils of victory. A precious vase, belonging to the church of Rheims, was taken soon after the battle of Soissons. When the plunder was set out for division, Clovis begged it for himself. You shall have nothing here, exclaimed a soldier, striking the vessel with his battle-axe, but what falls to your share by lot. Clovis dissembled his resentment and deferred for a better pretext the punishment of this insolence. Nor was the civil power less limited in peace, than the military authority in war. The general assembly in the Champ de Mars retained the legislative and the judicial powers in themselves. No Frank could be tried in any other court. And to complete his security against oppression, the right of defending himself by arms against any power whatsover, was both recognised and frequently exerted.

Such is the view of civil government under the first race which Boulainvilliers has given; and the same prejudice which has raised up swarms of zealots in England for the monarchical or the democratic nature of our Anglo-Saxon polity, led the sujects of Lewis

XV.

XV. to consider the constitution of their barbarian ancestors, not only as interesting in itself, which it undoubtedly is, but as bearing some connexion with the cause of liberty or of loyalty in their own times.

The next great work which appeared in France upon the Salian invasion, was by the Abbé Du Bos, the Histoire Critique de l'Etablissement de la Monarchie Françoise dans les Gaules. In opposition to Boulainvilliers, he contends, that the civil and military functions were united in the kings of the Franks; that the crown was hereditary, excluding females; that the Franks were not exempted from tribute; that the general assemblies of the nation, or parliaments, had no great authority, though the Salic code, he thinks, was enacted by the people, and not by the prince. But his leading opinion, and that which made such an epoch in the annals of French antiquaries, that the President Henault can find no parallel to it but the Cartesian philosophy, is, that Clovis, instead of invading Gaul as a barbarian usurper, entered it peaceably at the request of the Eastern Emperor, from whom he accepted at once the name and the office of Consul, and with the concurrence of the inhabitants. They, according to this author, felt little alteration; they were maintained in their rights and properties, were still governed by the Civil law, preserved the distinctions of senator and patrician, though perfect equality of ranks subsisted among the Franks, filled the most honourable situations in the Merovingian court, and even the mayoralty of the palace, mixed with the Franks by intermarriages, and were not deprived even of a share of their lands, for the accommodation of their courteous protectors. The proofs, by which this paradox is attempted to be supported, it would be impossible, as well as impertinent, to abridge in this place. 'Une erudition sans fin est placée non pas dans le systême, mais à coté du systême,' says Montesquieu, very happily; and the assertion is certainly true of many systems, whatever it may be of this. The illustrious author of l'Esprit des Loix has entered himself upon this subject; and his four last books, in which, according to Gibbon, but not in our judgment, the philosopher is sometimes lost in the legal antiquarian, contain many beautiful though desultory illustrations, of which it would be ridiculous to suppose that any of our readers are ignorant. The Abbé Mably published his Observations sur l'Histoire de France, between 1760 and 1770. In these he has moderated between Boulainvilliers and du Bos. Like the former, he asserts the original independence of the Franks, and the power of their annual assemblies; while he admits, that this free constitution soon degenerated into a mingled despotism and anarchy; that these assemblies were discontinued soon after the time of Clovis; and that the

the Bishops conspired with the Leudes or Antrustions, who were invested by the King with a personal but not hereditary nobility, to extinguish the democratical part of the constitution. To Du Bos he allows, that the Roman inhabitants were not reduced to servitude, nor even subjected to tribute; while he maintains, that they were placed in a state of great inferiority to the Franks. An answer to some parts of Mably's book was published by M. Moreau, which has never fallen into our hands. In the year 1801, a posthumous work of the President Henault was printed at Paris, the title of which is nearly the same with that of Du Bos. It contains a dissertation upon the antiquity of the French monarchy, of which the object is to refute P. Daniel, by proving a settlement of Clodian or Merovæus on the left bank of the Rhine. But the greater part is dedicated to a full statement and refutation of the systems which Bolainvilliers and Du Bos had proposed. We do not entertain any doubt of the authenticity of this production. It contains several passages, fragments of which have been inserted in the Abregé Chronologique, and bears no allusion to any publications posterior to 1738, which appears to be (tom. i. p. 168.) the date when it was written. At the same time, we regret to say, that, although learned and apparently accurate, it is replete with prejudices, and by no means adequate to the expectations which the Abregé Chronologique must naturally excite. The sentiment of Henault on the conduct of Clovis is, that he was really a conqueror, and not invited into Gaul; but that, with the prudence of Alexander, he conciliated his new subjects to his dominion, by leaving them in great part their laws and liberties, and gained as much by his policy as his arms. He dissents from Boulainvilliers in almost every opinion.

We regret that Dr. R. has wholly waived the consideration of many of these controversies, and that what he does say is often either confused or erroneous. On the royal succession we have the following note, p. 255.

'The nature of royal succession in France has been much disputed. The dissertations published on the subject are extremely numerous, and some of them ingenious and interesting. Hottman, du Kaillan, &c. have represented the crown of the ancient Franks as purely elective. Du Tillet, Fauchet, Jerome Bignon, &c. have affirmed, that it was purely hereditary. The Abbés Vertot and Thuilleries have endeavoured to prove that it was both hereditary and elective; that is, that, even after hereditary succession became customary, the people still claimed the right of election, or of formally nominating the successor. M. Foncemagne aims to show, that the crown has been successively hereditary; that, is, that it descended successively in the royal family, but not always to the eldest son, nor in a direct line from any one to another, according to the priority of age. Dissertations on this subject

subject may be found in almost every one of the first ten volums, and particularly in the 6th, and 8th, of the Memoirs of the Academy of Inscriptions and Belles Lettres. See also Pere Daniel's Preface Historique.'

But the sentiments of *Thuilleries* and *Vertot* are utterly opposite to each other. The former contends, that the crown under the first race was formally elective, but that the election fell always upon the nearest heir; and that no negative existed in the people. His opinion therefore resolves itself into that of Du Tillet and the other *Tories*. It is maintained by Vertot, on the other hand, that the crown was not merely elective, because none succeeded to it but the family of Merovæus, and because children were often raised to it; not merely hereditary, because in numerous instances the nearest of the royal line was rejected, in favour of one more distant; consequently, that there was a right of election within the family of Merovæus. This opinion apparently does not differ so much from that of Hottman and the other *Whigs*, as Vertot himself would wish us to believe. Dr. R. has, as the reader will observe, attributed this notion of Wertot's to M. de Foncemagne. The real opinion of Foncemagne (Mem. tom. 6. & 8.) is that the crown was strictly hereditary, but that all the sons succeeded equally.

As to the state of the former inhabitants, after the French invasion, Dr. R. thinks, that 'the more civilized Gaul, formerly a proprietor, was not dispossessed of what he formerly enjoyed, but reduced under the authority and laws of a Frank. He became the farmer or subordinate proprietor of what was his former independent property. Inferior tacksmen and cottagers scarcely felt the change.' We consider this opinion as improbable, and not consonant to any theory whatever.

Passing over Dr. R.'s account of the different classes of men under the Merovingian race, which is shamefully destitute of references, we shall extract his statement of the tenures by which lands were held, comparing p. 245. with p. 289. 'Property,' he says 'was held among the Franks, by immemorial possession; by the will of the nation expressed or understood, in their annual assembly; by inheritance, by gift, by purchase, or by prescription.' —'Any estate or lands purchased or acquired, not as a gift, either from the assembly, or king, or baron, but by an equivalent, was considered as *proprium*; an independent right, accountable to no superior, and conveyable to any one by deed. We find this kind of property described and conveyed as such, distinctly from allodial and feudal lands, by forms still in preservation.'—'Allodial lands were the public property gained by conquest or confiscation, and allotted to individuals, and tribes or cantons, by the general assembly.'—'Lands divided in this manner were called Salic, as well

well as allodial lands.'—'The manner of succession is not precisely determined; but it is certain, that males only could succeed.'—'Females were declared incapable of inheriting Salic or allodial property, *ne lancea transeat in fusum.*'

We submit, but with hesitation, that there is no ground for this distinction between *proprium* and *alodium*, which have been thought quite synonymous. '*Alodium*,' says Du Cange, '*idem esse dicitur quod prædium*, i. e. *possessio, hæreditas. Ugutio, et ex eo Gulielmus Brito, in Vocabular. M. S. Prædium dicitur possessio, villa, ager, seu perpetuum alodium; et dicetur alodium, hæreditas, quam vendere et donare possum; ita est mea propria.*' Du Cange, *in voc. Alodium.* And again, he defines *Proprietates* by the words *Alodia, Patrimonia.* The 'forms still in preservation,' to which Dr. R. refers, are the 47th and 49th among the *Formulæ incerti Auctoris*, annexed to Marculfus. These are, each of them, in the nature of a testament, by which a father constitutes his daughter joint heir with her brothers, in the property which he inherited from his ancestors, and to which he declares, according to the Salic law, she could not otherwise succeed. But the word *proprium* is never used, nor any such property pointed at, as Dr. R. supposes. It seems from hence, that the property thus devised was not only allodial, but Salic. For we rather conceive, that Salic and allodial lands differ, as a part differs from the whole: at least the 62d title of the Salic code is *De Alodis*, and contains several rules of inheritance with respect to allodial property, expressly pointing out the cases in which females may inherit, to wit, after males in the same degree. Then follows the famous clause: *De terrâ verò Salicâ in mulierem nulla portio hæreditatis transeat, sed hoc virilis sexus acquirit, hoc est, filii in ipsâ hæreditate succedunt. Sed ubi inter nepotes aut pronepotes post longum tempus de alode terræ contentio suscitatur, non per stirpes, sed per capita dividuntur.* Is not this a proof that some lands were allodial which were not Salic? The tenth formulary of the second book of Marculfus is a deed of a grandfather, declaring his deceased daughter's children joint heirs with his sons in all his property, lands, houses, vineyards, &c. with all the particular enumeration of a modern conveyance; *et quodcunque dici potest, quicquid supra dicta genetrix vestræ, si mihi superstes fuisset, de alode meâ recipere potuerat.* This does not look like an absolute exclusion of females from allodial succession. At the same time we confess, that the next formulary but one in Marculfus, (lib. 2. 12.) seems to favour Dr. R.'s opinion, or rather an improvement of Dr. R.'s opinion; for it is quite untenable in its present shape, namely, that *propria* and *alodia* differ as *feuda antiqua* and *feuda nova*, or estates taken by descent and purchase in the English law; and that, although both were heritable,

table, and both subject to the power of devise, yet they were regulated by a different law of succession. The title of the sixty-second law of the Salic code above cited, might be thought much in our favour, since it is evident that part of that law relates to property which females might inherit, could we be certain that the title was coeval with the law itself; but this may be questionable. It may be remarked, by the way, that those who rely on the etymon of *alod* from *all*, entire, and *odh*, possession, which is approved by Blackstone, Wright, and Stuart, and which seems confirmed by the corresponding words *udal* and *feod*, will not be disposed to admit Dr. R.'s supposition. Eccard, however, derives the word *alt*, from old, and *odh*, possession, *veterem avitamque possessionem indicat;* and, *perhaps*, *alodium* may be every where rendered *inheritance*. On the whole, we leave this point to men of more learning and leisure, justifying the opinion which we first stated by the very high authority of Du Cange.

No authority is given by Dr. R. for the assertion, that allodial property was derived from the gift of the people in their annual assembly. We are too conscious of the danger which attends a negative proposition in history, to aver, that no such authority may be found; but we look upon it as contradictory to the only plausible ground on which Du Cange's notion of *alodium* can be opposed, namely, as we intimated above, that it implies lands taken by descent. This theory about the origin of allodial tenures, gives rise to the following account of their decline under the Carlovingian dynasty.

'The very independence of allodialists contributed to depress them. Proud of their peculiar rank and antiquity, for they generally traced the tenure of their lands to the gift of some ancient general assembly of the nation, and there were not very many tenures of this kind to boast of, they were disposed rather to hold in contempt beneficiary and feudal tenures, as an inferior kind. The least insinuation or appearance of this spirit naturally excited jealousy, and provoked resentment. As others could exact from them no service, so, neither had they reason to expect from others favour and protection. They were even jealous of any claim being made on them, or of any thing granted as a favour being construed as a right. Distant and reserved, they mingled not easily with the partisans either of one side or another, around them. Scattered as they were over the country, it was almost impossible for them to form, or for any length of time to maintain among themselves an extensive confederacy. Necessity thus obliged them to sacrifice pride to prudence, to become the men or vassals of those who, though their tenure was of a more recent date, or of an inferior sort, were, from the circumstances of the times, and their more extensive territory, able to afford them protection and security.' Vol. II. p. 217.

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There is not an atom of reference for this statement, which we suspect to be a baseless fabric, supported only, like the elephant on the tortoise, by the groundless assumption, that allodial estates were derived from the gift of the nation at large, and in no other way. That allodialists 'held in contempt beneficiary and feudal tenures' we have never read: we know that the feudal proprietors were vastly more powerful in the times of which Dr. R. is now treating, and that they gradually absorbed almost all the rest into the vortex of the feudal polity. Benefices, as Dr. R. has proved from Marculfus, were in some instances hereditary as early as the seventh century; though they probably did not become such in general before the age of Louis le Debonnaire. But how far these benefices partook of the essential properties of fiefs, we suspect to be extremely doubtful. The word *feudum* is not known to be older than A. D. 1000.

In the second section of this third chapter, we are treated with a compendium of the different codes of law which prevailed in Gaul during the period comprised in the volume. We object to the introduction of the Roman law at the front of these, because it was not predominant in the country after the conquest by Clovis, and because a great part of what Dr. R. has inserted is utterly inapplicable to the condition of a distant province. But, at all events, he should have avoided blunders. 'The peaceable possession of moveables unclaimed for one year, and of heritables or immoveables for two years, formed the right of *usucapio*; but in later times the right of prescription was extended to ten, or even twenty years.' This is not quite accurate nor full; the prescription here fixed is only in favour of a *bona fide* purchaser: ten years were made the term of limitation, where the rightful owner was in the country; twenty, where he had been abroad. 'Property was either liferent, usufruct, or heritable. In the former, the subject could not be deteriorated; but on the death of the possessor, or on the expiration of his lease, it returned substantially to the general or legal proprietor.' This is all confusion: usufruct is neither opposed to heritable property nor to liferent, but to the naked right, which, by a legal fiction, was supposed to reside in a different person from the usufructary. The titles referred to in Heineccius, lib. 2. tit. 4. & 5. have nothing to do with *liferent*, which seems to be a gloss of Dr. R.'s upon *usufruct*. 'An insolvent debtor was sold, or, if any of his creditors insisted upon it, his body was divided among them. *It is thought that the latter punishment, however, was seldom inflicted.*' It is *thought* that the latter punishment was never enacted; it is *known* that it was never inflicted. See Heinecc. lib. 3. tit. 30. Dr. R.'s own reference.

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'The Roman judges were anciently their kings; then the consuls; afterwards the prætors, *and their assessors, chosen annually by the people.*' It is not true, that the assessors were chosen by the people. They were selected by the Prætor from the class in whom the judiciary power resided. So much for the Roman, now for the Barbarian laws.

'If no heir appeared to claim the property of the deceased, it fell to the king, or to the public treasury.'

This purports to be the 65th title of the Salic law: with what accuracy Dr. R. has translated it, we leave the reader to judge, when he has compared the original words.

'Tit. 65. *De compositione homicidii. Si cujuscumque pater occisus fuerit, medietatem filii in compositione colligunt, et aliam medietatem parentes qui proximiores fuerunt, tam de paternâ quam de maternâ generatione dividunt. Quod si de paternâ vel maternâ parte nullus proximus fuerit, portio ille ad fiscam perveniet, vel cui fiscas concederit.*'

'One of the capitularies of Charlemagne, after explaining what interest is, declares it to be just, when no more is required than was promised; another of them declares it to be usury, when more is demanded than was stipulated.'

Thus Dr. R. and thus the capitulary, as quoted by him.

Usura est, ubi amplius requisitur quam datur. Verbi graitâ si dederis solidum, et amplius requisieris: vel si dederis modium vini, frumenti, et iterum super aliud exegeris.

It is obvious how little this supports the translation above.

'He who would not restore what he had borrowed, *and he who would not pay his just debts after they were formally demanded,* was fined nine solidi; and if he still refused, fifteen solidi more were to be imposed on him.'

The words in Italics are foisted in by Dr. Ranken. The law, Lex. Sal. tit. 55. has nothing of them. The fine, as far as we can judge, seems rather to be imposed for the contempt in neglecting legal process, than for the breach of trust.

In Dr. R.'s sketch of the Ripuary law, we have remarked the following inaccuracy.

'Sales of large property were also made by writing; but if the subject was small, it was held legal before six, or if very small, before three witnesses. In the case of purchasing a large property, it was done in the presence of twelve boys, besides the witnesses, to each of whom the purchaser gave a blow and a pinch of the ear, to secure remembrance of the sale.'

We shall confront this with the law itself, tit. 59. and 60.

Si quis alteri aliquid vendiderit, et emptor testamentum venditionis accipere voluerit, in mallo hoc facere debet, et pretium in præsenti tradat, et rem accipiat, et testamentum publicè conscribatur. Quod si parva res fuerit, septem testibus firmetur; si autem magna, duodecim roboretur.

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Si quis villam aut vineam aut quamlibet possessiunculam ab alio comparavreit, et testamentum accipere non potuerit: si mediocris res est, cum sex testibus; si parva, cum tribus; quod si magna, cum duodecim ad locum traditionis cum totidem numero pueris accedat: et sic iis præsentibus pretium tradat, et possessionem accipiat, et unicuique de parvulis alapas donet, et torqueat auriculas, ut ei in postmodum testimonium præbeant.

It must be obvious to every one how much these interesting titles have been misunderstood by Dr. Ranken. The first relates to chattel (and perhaps incorporeal) property, which might be delivered any where; and therefore the *mallus*, or great court of the king, was the place appointed as most public and solemn.—The second relates to such property as, in the terms of the English law lies *in livery*, and will pass by mere symbolical delivery of possession upon the spot, without deed,—as lands and houses. The admirable use which the legislators of Gaul made of the doctrine of association, is not unknown to those consummate metaphysicians the churchwardens of parishes in England, who with more sagacity, it must be confessed, than justice, perpetuate the memorial of parochial boundaries by smiting the scalps, or scourging the posteriors of the junior members of the workhouse.

'The dowry granted to the bride by the father in-law (*Legis Visigoth. lib.* 3. *tit.* 1. *l.* 5.) was not to exceed a tenth part of his fortune.

'Dr. Ranken here confounds dowry with dower; or at least uses the former word in an obsolete sense. *Dos* has one meaning in Horace, and another in the code of the Visigoths, who had very different notions of latinity. We apprehend that *dos*, in the classical sense, is rarely used by the law writers of the middle ages.

But to proceed—

'This dowry,' says Dr. Ranken, 'was to be entirely at her own disposal; only, if she died intestate, it was to return to the husband and his heirs.'

The law says, *De his omnibus in conjugio mulier assumta,* SI NON RELIQUERIT FILIOS, *facere quod voluerit liberam se noverit habere licentiam.*

'Even *pannels* were protected by laws. To strike or injure a *pannel* unnecessarily or unreasonably, was punished with 100 lashes; or if by a slave, with 200!'

We fear the word *pannel* will convey no sort of idea to some of our worthy friends in the south. Pannel, be it known, means, in Scotish law, and Dr. Ranken's history, a prisoner, or person under trial. But this is a verbal criticism. Suppose it should

turn out, that this protecting humanity of the Gothic code is a creature of Dr. Ranken's brain, begotten between ignorance and inattention? '*Si quis furem captum aut reum alicui excusserit, si majoris loci persona est, extensus coram judice pro solâ præcumptione centum flagella suscipiat, et quem excussit repræsentare cogatur.*'—Cod. Vis. lib. 7. tit. 2. l. 20. The law goes on to enumerate other cases of the same offence, and inflict other penalties. Now, the meaning of this is clearly—If any one *shall rescue from another, a thief taken in the act*, or one accused of a crime, he shall receive a hundred lashes before the judge, and be compelled to bring back the man whom he rescued. But Dr. Ranken has construed '*furem alicui excusserit*,' *shall beat any thief*; whereas, no blows have been sustained but by Priscian.

'If a husband dismissed his wife (we are now in the Burgundian code, tit. 34.) without any cause, then his fortune went to her and her children.'

The lady was not even to be dismissed; *Si de his tribus facinoribus* (adultery, witchcraft, and violation of sepulchres; that is, we suppose, supping with goules) *nihil admiserit, nulli virorum liceat de altero crimine uxorem suam dimittere; sed si maluerit, exeat de domo rebus omnibus dimissis, et illa cum filiis suis his, quæ maritus habuit, potiatur.*

The fourth chapter contains the history of learning, upon which we have no particular observation to make. The fifth that of the arts. Of this, a great part is occupied by accounts of agriculture, architecture, and the like, all extracted from Roman writers, and relating to Italy alone, but little more applicable to France than to Kamtschatka. They are, moreover, as erroneous as they are impertinent. To say nothing of a translation from the elder Pliny in p. 416, and from the younger in p. 444, which would reap stripes in a schoolboy, what could induce Dr. Ranken to enter into a description of the five orders of architecture? What demon could put into his head, that 'the Corinthian order is little more than an additional ornament to the chapiter of the Ionian column?' or that, in the Ionic, 'volutes were made to depend from the architrave?' If this be so, there has been a marvellous conspiracy in all architects, ancient and modern, to delude the world; since it is certain, that in every building and in every book, the volutes are found to be appendages to the capital, and not the architrave, of the Ionic order. Gothic architecture comes next under review, though at the death of Charlemagne, when this volume ends, there certainly was not a Gothic edifice throughout all Europe. We shall not be severe upon Dr. Ranken's notions about this art, as it seems the privilege of all the world at present to talk about Gothic architecture, without understanding

understanding what it means. The sixth and seventh chapters, the history of commerce, and of language, and manners, are very jejune,—probably in some degree, through the deficiency of materials.

We have been so long detained upon the first volume of Dr. Ranken's work, that we can pay scarce any attention to the two last. We shall only make a few strictures on the extracts which he gives from the Capitularies.

One of these enacts, *Ne decem anni, neque viceni, vel triginta annorum præscriptio, religiosis domibus opponatur, sed sola quadraginta annorum cunicula.* This law is founded on the same principles as the English maxim, *nullum tempus occurrit Ecclesiæ;* that is, the probability that men, who have only a life-interest, will rather lose or compromise their rights, than embark in litigation. But Dr. Ranken, overlooking the words *religiosis domibus*, has rendered it as a general rule of prescription for all persons. Again,

'A man's widow was entitled to a third share of the fortune which he had himself acquired; *but all that he held by inheritance, or other mode of accession, from his friends, descended to his children and other legal heirs.*'

The Capitulary says, *De iis rebus, quas is, qui illud beneficium habuit, aliunde adduxit vel comparavit, vel ei ab amicis suis collatum est, has volumus tam ad orphanos defunctorum, quam ad uxores eorum pervenire.*

'Culpable homicide was punished with banishment, besides the wargild, or fine, paid to the nearest heirs of the deceased. Murder was punished with death.

The capitularies referred to, are lib. 4. 20. and lib. 6. 39. The first runs in these words: *Quicunque hominem aut de levi causâ* AUT SINE CAUSA INTERFECERIT, *Wirgildus ejus his, ad quos ille pertinet, componatur. Ipse verò propter talem præsumptionem in exilium mittatur, ad quantum tempus nobis placuerit, res tamen suas non amittat.* The second enacts: *Si quis ferro percusserit hominem, et mortuus fuerit, qui percussit, reus erit homicidii, et ipse morietur.* We were struck by the difficulty of reconciling these two laws, and once supposed the second to have been an alteration of the first; but on looking more narrowly into the sixth book of the Capitularies, we found it to be merely an extract from the Levitical law, from the beginning down to the 54th title. Thus, the law, *Si quis ferro*, &c. above cited, is a translation of Numbers, ch. 35. v. 16. We do not apprehend that the Mosaic code was ever of binding force in the dominions of Charlemagne, and consider the *first* law respecting homicide as the true one.

Dr. Ranken is both amused and scandalized at the following law, *Capit. lib.* 7. 321. 'Let no man take more than two wives,

for a third is superfluous.' We are inclined to believe that even a second would have been thought a needless luxury, during the lifetime of the first; and that the law relates to a succession of helpmates, which, as is well known, the Church at that time discouraged.

The third volume brings the history down to the death of Louis VIII. in 1226. We do not pretend to have looked much at it; the labour of a reviewer must end somewhere; and our readers will probably dispense with any farther account of this performance. If we seem to have been too harsh and rigorous in our scrutiny, it should be remembered, that no duty of an historian is so essential as fidelity, nor any so incumbent upon a critic as to investigate narrowly those positions, which, as they are founded upon very remote and obscure authorities, few readers have the leisure or inclination to examine. Dr. Ranken seems to have had some encouragement, as the volumes have hitherto appeared with tolerable regularity. We do not wish to dissuade him from proceeding. That he is, like too many persons in this country, but moderately versed in the Latin tongue, we have had several proofs; but in the succeeding periods, that language will cease to be so essential, and almost every document upon French history will be found in the vernacular idiom. Accuracy is surely in his power, and surely worth the preserving. We shall track him in his path, if he goes on; and while we shall think it our duty to point out any deviation from the true course, we shall always be happy to discover that he is disposed to redeem his credit, and earn that station in the literary world, to which his extensiveness of reading, when accompanied by adequate attention, will certainly entitle him.

ART. XVIII. *A Mineralogical Description of the County of Dumfries.* By Robert Jamieson, Regius Professor of Natural History, and Keeper of the Museum in the University of Edinburgh; Fellow of the Royal and Antiquarian Societies of Edinburgh, of the Linnæan Society of London; Honorary Member of the Royal Irish Academy, of the Mineralogical and Physical Societies of Jena, &c. 8vo. pp. 185. Edinburgh, 1805.

WHEN we took up this volume, we expected to find a mineralogical description of Dumfries-shire constructed on a plan similar to 'The Mineralogy of the Scotish Isles,' and executed with the same accuracy which had procured for that work a certain share of reputation. Our surprise, however, and disappointment

pointment were both considerable, when, instead of the facts and practical observations which the title taught us to expect, we found ourselves plunged all at once into the profundities of a new theory, the grounds of which are not explained; and overwhelmed with a tedious detail of hypothetical reasonings and conjectures. We have no doubt, indeed, that the good people of the county, who expected information of a much humbler description, will find themselves very much edified with *oryctognosie* and *geognosie;* with *transition rocks* and *floetz-trap;* and with the German and French quotations by which the book is adorned. It must also be a great source of consolation for them to learn, that their rivers bear a striking resemblance to the Rhone, the Rhine, the Elbe, and the wide-rolling Danube; and that the configuration of their vallies has a wonderful affinity to that of the vallies of Germany, to the valley of Cachmere, the paradise of the Hindus, and even, according to all probability, to the vallies of the moon.

For our own part, we have already entered our protest against the introduction of these barbarous and dissonant appellations; and can conceive no other motive for the display of so much irrelative erudition, but Mr. Jamieson's unbounded admiration for the tenets and speculations of the Wernerian school. In the Mineralogy of the Scotish Isles, he supports the probability of forming a systematic arrangement of minerals by classes, orders, genera, and species; and points out several geological facts that cannot be reconciled to the floetz-trap system of Freyberg. But in his System of Mineralogy, this classical, Linnæan mode of arrangement, is totally abandoned; and in the Mineralogy of Dumfries, not a fact is allowed to appear in a form which might disturb the infallible geognostic and oryctognostic opinion of Werner.

In the introduction, the author tells us, 'that it is an opinion too generally credited, that the art of mining is easy and simple, and that little education, and no very great share of practical knowledge is necessary for its successful prosecution.' This opinion, we confess, is new to us, and we suppose it meant as a prelude to Mr. Jamieson's list of the qualifications necessary for a 'mine engineer.' These are so rare, and so many, as to remind us of the reply of Rasselas to Imlac: 'Enough! thou hast convinced me that no human being can ever be a poet!'

But after a man has acquired this long detail of preliminary knowledge, we very much doubt of his being qualified 'conscientiously to take charge of a great mine.' All the abstract mineralogy in the world, could not qualify him to judge whether the miners would receive an adequate reward for their labour, in sinking a shaft, or driving a level, at the rate of five pounds, or twenty

twenty pounds, per fathom; yet, an accurate knowledge of this, is the most essential part of a mine-agent's duty. Such knowledge can only be acquired by a person who has himself worked as a miner; and, accordingly, mine-proprietors generally select for their agents, the most intelligent and acute among their workmen. In place of every department of the work depending on the life of one man, to whom a successor, qualified as Mr. Jamieson thinks necessary, might be sought in vain, there are separate agents for the subterraneous works, for washing and smelting the ores, engineers for the water and steam engines, and woodmen for the carpentry necessary to support the mines. The introduction concludes with rather an ostentatious display of the great benefits likely to result from the survey, and an enumeration of five important discoveries that have been made.

The first discovery is of 'an extensive tract of *transition rocks*, a class of rocks hitherto unnoticed in Great Britain.' Does the author mean that the rocks in question were not noticed until he pointed them out? This is very far from being the case, for, though they may not have been arranged under the Wernerian system, they had certainly been noticed and described by many. His second, third, and fourth discoveries, are lead-glance, pitchstone, and coal formations; which, however they may differ from those described by Werner, were certainly known before. With respect to glance-coal, his fifth discovery, it is surely far from being new under its vulgar name of *blind-coal*.

In the first chapter, we are presented with a delineation of the mountains, vallies, and medicinal springs in the county, which we doubt not may be sufficiently accurate as far as it goes.

Mr. Jamieson's very tedious excursion to the Continent, in order to explain the formation of the rivers and vallies of Dumfries, appears to us to be completely unnecessary, as illustrations infinitely more striking, might easily have been found at home. If he had made use of his eyes while exploring the Highlands and Isles, he might have seen many streams which, partly by washing down earth and mud, so as to raise the bottom, partly by wearing down their outlets, have converted very deep lakes into extensive vallies. We shall only mention a few where the process is not yet fully accomplished. These are, the Teath, the Allan, the Earn, the Spey, the Findhorn, the Nairne, the Gairy, which flows into Loch Oich, and the Beaulieu, which flows into the head of the Moray Frith. Many smaller streams might be mentioned, both on the Mainland and in the Isles. The Spey, in particular, is first met by a barrier of red sandstone, where the bridge is now building at Fochabers, which must have converted

verted a very extensive tract of country behind into a lake. There is evidence, indeed, that the river had wandered very extensively towards the west, before it settled in its present channel. At the village of Rothes, it is met by a much higher barrier of red sandstone, which must have occasioned a restagnation all the way to Kinrara; and the hollows seen on the rising grounds to the west of this village, show that the river had formerly flowed over the top of this barrier, and had frequently altered its course, before settling in the present channel. Here we see a beautiful illustration of the way in which rivers scoop out vallies, which our author does not explain. The mountain ridge of Kinrara intersects the plain from north to south; and it is evident, that the river had at one time flowed on the north, at another on the south of this ridge. Terrace rising above terrace, on the north side of the present channel, show the different elevations at which it had flowed, before the channel was worn to its present depth. A considerable tract behind is still in the condition of a lake, and, in great floods, parts of the country are overflowed to the distance of more than 15 miles. Where this river bursts through the barrier of the Badenoch mountains, it leaves a valley, extending nearly to the base of the Black Mount, and other mountains contiguous to Ben-Nevis, where its sources are situated. Part of this valley is still a lake, and a very extensive tract is still occasionally overflowed.

The materials which have filled up these lakes, have not all been conveyed by the main stream; but by far the greatest part of them by lateral torrents, from the neighbouring hills. These, where they have met the stagnant water, have often formed steep banks, and elevated plains, composed of gravel, which have all the appearance of being artificial. Of this among many others that might be mentioned, there is a remarkable example at Callender on the banks of the Teath, in Perthshire. It is called the camp, and is universally esteemed to have been a Roman encampment, though an accurate investigation must convince every person that it has been formed in the way here described, when this extensive valley was a lake, before the Teath had cut through the sandstone rocks towards Lanrick. In all cases, the soil next the torrent which entered these lakes, abounds in gravel and sand; and towards the outlet it is soft mud, which can be conveyed by slow moving water. We forbear entering farther into this subject; but cannot help expressing our surprise, that so many books should be quoted, and the reader conveyed all the way to India and America, to receive illustration of a doctrine, while our author might have referred to so many examples immediately under his eye.

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The account of the medicinal springs at Moffat, is chiefly copied from Dr. Garnet. Our author remarks (p. 30,) with great probability, that some salt springs on the Solway Frith were derived from the sea; and then he goes on to give directions how to discover salt rocks from salt springs, which gives him an opportunity of introducing a theory of Werner. But we cannot help remarking, he would have been more usefully employed in inquiring whether any such springs existed in Dumfries-shire, than in applying Werner's theory to the case.

In p. 34, he adopts an opinion of Werner, that basaltic hills, for the reasons there stated, are very favourable to springs. Now the reverse of this is the truth in Scotland. Our whin and basaltic rocks emit fewer springs than most others. The reason is, that they seldom have wide veins; and all copious perennial springs, in mountainous ranges, are from veins, the natural drains of a hilly district. Grey wacke, silicious schistus, granite, and not seldom red sandstone, are remarkable for copious springs. Nor is columnar basalt, as our author assumes from Werner, always seen to rest on clay in this country; but it often rests on a shattery and confused basis of the same material, or on sandstone, which is commonly, white next the columns though frequently red below.

In Chap. II. our author proceeds to a more minute detail of the mineral structure of the country. As Mr. Jamieson uses Werner's geological language, we cannot help wishing for a more copious explanation, than he condescends to furnish, of '*transition rocks*,' *floetz-trap formations*,' &c. No term in mineralogy has produced more confusion than the word 'trap.' The late Dr. Walker, wishing to ascertain, experimentally, what trap was, corresponded with the most eminent mineralogists in Germany, Denmark, Sweden and Russia, and requested they would forward specimens of trap. They sent him granite, basalt, sandstone, slatestone, ollaris, &c.; and all such stones as were usually applied in their neighbourhood in the construction of stairs; the word *trap* meaning a stair.

Our author, indeed, in a note, p. 110, offers an explanation of the sense in which he uses the word *floetz;* and says it 'is applied to all those formations which are contained between the transition and alluvial rocks. It implies that these formations are charactaristically distinguished by their frequent occurrence in beds (floetz).' It unfortunately happens, however, that *floetz* does not mean beds. Of trap, he offers no explanation: the two terms coupled together, are sufficiently absurd, meaning a *floating stair*. In page 39, he observes, that 'nearly the whole of the upper part of this county is composed of transition rocks.'

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It does not, however, present all the species that occur in other parts of the world. Our author only observed 'grey-wacke, grey-wacke slate, flinty slate, alum slate, and transition greenstone.'

In p. 44, an explanation is given of the meaning of *transition rocks*. We are told that 'Werner, by an attentive examination, found that they contained mechanical deposites, petrifactions, and, considered as a class, were more simple than the primitive. He also discovered that they were formed during the transition of the earth from its chaotic to its habitable state; hence he denominated them *übergangsgeburge*, transition rocks.' With submission to our author, Werner's discovery is, in the language of common sense, conjecture, to be supported or rejected as we advance in the science of geology.

It would certainly be a very great acquisition to geology, were a mode of classifying rocks adopted, which, in viewing a country, would enable us to refer each to its proper order. The distinction of primitive and secondary rocks, has long been in use, though it can only be admitted with some limitations. Granite is commonly reckoned the oldest rock now in existence; and its formation most probably preceded the existence of animals and vegetables, because no animal nor vegetable remains are found in it. But that other rocks existed before granite, is manifested by no dubious indications, to those who have been accustomed to examine the structure of granite mountains. In place of *primitive*, the word *primary* should therefore be substituted, which only denotes precedence in a relative sense.

Werner, we believe, is the first geologist who has classed rocks under 'primitive,'—'transition,'—'independent coal formation,' and 'floetz-trap formation.'

With regard to his *primitive*, we have already said that no rocks, now existing, are primitive in an absolute and unconditional sense.

If he has found animal and vegetable remains in his *transition rocks*, these rocks must have been formed after the earth became habitable, or capable of sustaining animal and vegetable life: consequently, they could not have been formed during the transition of the earth from a chaotic to a habitable state. Such rocks might be called secondary, in respect to other rocks, where no such remains were found, though they might, in their turn, be regarded as primary, when compared to many others of a later origin.

Whatever foundation Werner's system may have, in the country around Freyberg, it will never apply to Scotland. Among the four transition rocks mentioned as found in Dumfries-shire, or, we

we may venture to add, in any part of Scotland, we challenge Mr. Jamieson to produce a single specimen containing petrifactions. In the extensive range of flinty slate rock (silicious schistus) of the vallies of Glengonor, Wanloch, Mennock, Clyde, &c. we never could discover any; nor were we more successful in the 'grey-wacke' of Leadhills, nor in the beds of transition greenstone' (compact feltspar rock) that are dispersed throughout the upper part of the country. We are also informed by a very observing geologist, that none were ever seen in the fine slate quarry of Glenochar. The late Dr. Walker, whose accurate knowledge of mineralogy is well known, and whose long residence in this country afforded him abundant opportunities of observation, long ago pointed out to us these rocks as a class that never contained petrifactions, and were, of course, ranked by him as primitive. We can discover no logic in the conclusion, that this class, because more simple than the primitive, were therefore formed after them.

Of grey-wacke slate he observes (p. 47.) that 'it contains petrifactions, particularly those varieties that border on grey-wacke.' But in his description of the *grey-wacke*, no petrifactions of animal nor vegetable substances are mentioned; and we are therefore left in the dark respecting 'those varieties that border on *grey-wacke*.' It is true, he endeavours to get out of the mine by a note, which states, 'The petrifactions found in transition rocks, are of animals and plants of the lower orders, that probably no longer exist on the face of the earth.' But if they be animals and plants, they must be organized as animals and plants now are, and we have already called upon him to produce such petrifactions in any of his transition rocks in Dumfries-shire. This awkward apology indeed betrays rather an implicit attachment to a system, than a careful exposition of facts from personal observation. The science of geology will never advance under this plan; and we seriously recommend to Mr. Jamieson to throw off these trammels of system in a science where so much still remains for observation.

He concludes this article with a pompous description of the great abundance of useful slate likely to be found among these hills, and refers to his brother, who 'has promised to examine these rocks with this view.' His brother, however, need not take this trouble, because excellent slate is already known, and has been worked to a great extent, for many years, at Glenochar; it is also found at Newton, on the borders of the county, near Elvanfoot; in the barony of Drumlanrig; and in several other places.

He next describes, '3. *flinty slate;*' '4. *common alum slate.*'

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Page 50, we come to '*5. transition greenstone.*' On this he observes,

'On the hanging or upper side of the Susanna vein in the valley of Leadhills, I observed a bed of rock, which at first I mistook for porphyry, but which proved, on more attentive examination, to be greenstone. It is almost entirely composed of feltspar, which has usually a pale flesh red, or reddish white colour; in it there is sometimes imbedded grains of greyish coloured quartz, scales of iron black-coloured mica, and crystals of pale flesh-coloured feltspar. Sometimes the basis is in a state of desintegration; and then it resembles porcelain clay.'

He might have added, that this rock also contains cubical pyrites; and, in place of occurring in beds from 'three to twelve feet thick,' he would have been more accurate had he said beds from one to thirty feet. We confess no part of the volume gave us more surprise, than the reasonings of Mr. Jamieson, to prove that a compact feltspar rock, of a pale flesh-colour, and such as Kirwan perhaps would call a granitel, was a variety of greenstone. But it seems a link was wanting in Werner's 'floetz-trap formation suite;' and our author assumes no small degree of merit, at the close of his introduction, for supplying that with transition greenstone. The name *grünstein* or *greenstone*, has been given by Werner to a rock composed of hornblende and feltspar; and, according to Mr. Jamieson, our whinstone of Salisbury Craigs belongs to this class of rocks. The term is sufficiently improper, as every person knows that a mixed colour of grey and black, and not green, is the most usual colour of this kind of stone in Scotland. In note F, annexed to this article, we are cautioned not to be too micrological in our observations in describing a rock mass; that is, we must reject all the labours of former mineralogists in classifying rocks, from their obvious appearances, their component parts, and chymical qualities, as useless; and confound them all in the sweeping *floetz-trap suite* of Werner.

Let us endeavour to give, in one view, our author's strange and inconclusive reasonings on this subject. In greenstone, as described by Werner and Kirwan, hornblende is a necessary and indispensable ingredient, combined with compact feltspar. Mr Jamieson meets with beds of compact feltspar rock, in which there is *no hornblende*, and this, 'in hand specimens, we may venture to consider as feltspar.' But in the great, that is, the bed taken in mass, we are desired to view it as a greenstone, though it wants the very ingredient in its composition that constitutes greenstone. By such legerdemain, any one stone may be changed into any other, and mineralogy thrown into inextricable confusion. But when a deficient link in a favourite theory is to be supplied, one stone will answer as well as another. To such

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of our readers as have not specimens of the two rocks, we shall only observe, that true greenstone melts to a black glass, and the compact feltspar of Leadhills to a white porcelain. But chymical qualities are overlooked by the followers of Werner.

We shall only offer a few remarks on the description he gives of the lead veins of Wanloch-head and Leadhills, which, though superficial, we presume is accurate as far as it goes. He substitutes the term *lead glance* in place of galena, because he says it is English. *Quære*, Is *lead glance* English? In p. 57, he observes, that 'the lead glance formation of Wanloch-head and Leadhills, is completely different from any enumerated and described by Werner.' This gives him an opportunity of introducing the seventeen lead glance formations which are described by Werner, and a long French quotation from that author on the same subject.

We confess we do not see with what propriety either the formations or the quotation are introduced. The mines of Wanloch-head and Leadhills not only differ from all of the seventeen formations; but they also differ from the New Galloway mine, from the Alfton mine in Ayrshire, from the Tyndrum mine in Perthshire, and from the Strontian mine, Argyleshire; and all of these differ, not only from 'the seventeen lead glance formations,' but from each other. Now we ask, what useful conclusion can be deduced from this display of 'lead glance formations?'

In note H, explanatory of this article, our author traverses the Hartz, and other parts of Germany, in order to show that his transition rocks are very favourable to ores. This may be the case in Germany; but, in Scotland, ores are as frequently found in other rocks as in those to which he has given the name of *transition*. Thus, the copper vein of Aithray, near Stirling, runs in a coarse marly breccia or puddingstone above, red stone marl below this, and red sandstone the lowest of all. The veinstones are ponderous spar, and semitransparent spar of lime. If we be not misinformed, the copper vein of Applecross in Rossshire, opposite the island of Raasa, runs in a hard coarse puddingstone, whose cement is ferruginous clay. At the base of the Ord of Caithness, a very large vein of rhomboidal spar of lime, includes a vein of copper ore, and many cubes and blotches of our author's glance lead. This vein runs in red sandstone, the strata of which are almost vertical. At Clyth, belonging to Sir John Sinclair, a vein of ponderous spar, more than a hundred feet broad, intersects the country to a great extent, and, where it happens to be uncovered, shows strong indications of copper ore. This vein intersects bituminated calcareous sandstone, of a greyish blue colour, arranged in regular strata, which, we presume, our author

thor would reckon of floetz-trap formation. On the summit of Skinnethill, Sir John possesses a workable vein of glance lead, running in the same species of rock; and, it is presumeable, its thickness may increase at a greater depth. It is connected with ponderous spar, and with ore of arsenic. At Sandside, a similar vein of glance lead is seen, running partly in a blue bituminated limestone, partly in blue calcareous sandstone. It is connected with ponderous spar, though no arsenic is visible. In various parts of Caithness and the Orkneys, smaller veins, and frequently large masses of glance lead are found in bituminated calcareous sandstone, of a blue, or greyish blue colour. Thus all our author's directions (p. 75.) which seem to limit our search for metallic ores to his transition rocks, appear utterly inapplicable to Scotland; and we are as likely to find them in his *floetz-trap* as in his *transition*.

He also classes the alum-slate found near Moffat, among the transition rocks. It may be so; but in various parts of Scotland, there are large strata of this substance, which answer the description he gives of it (p. 49.) connected with coal: and at Hurlet, near Paisley, there is an extensive manufacture of alum, from materials found in a coal-pit. The latter will not surely be reckoned *transition*, unless we are resolved to stretch Werner's suite beyond all bounds.

When our author (p. 79.) enters upon his 'independent coal formation,' we confess he plunges far below our depth. He subjoins a note, which, in place of explaining, renders his meaning more doubtful than it was before. He says, 'this formation is styled independent, because it exists independent of any other; whereas the coal found in the older sandstone, fluetz-trap, and alluvial formations, is to be considered as subordinate to, or dependent on them.' Does he mean that this 'independent coal' is self-existent? Or that it was created where it now exists, without deriving its origin from any previously existing matter? Or that it was formed independent of the strata which cover it? If the last be his meaning, it implies a palpable absurdity. The characters he gives from Werner, of the strata accompanying this 'independent coal,' are seldom applicable to the strata connected with any coal, known to us, in this country. Thus, the characters leave us much in the dark as the explanatory note.

By 'independent coal formation,' however, if it have any meaning, we presume he means coal found under red sandstone; and as the chief object of his survey was to find coal where it was not known before, we shall pay particular attention to the arguments by which he endeavours to establish this point. Our author seems so intent upon his 'independent coal formation,' that he

he skips over the only actual coal formations known in the county. He presents us with no account of the strata in which the working coal is included, the thickness of the seams, their inclination, or bearing. All we can gather from his description, and from the figure annexed, is, that these beds assume the extraordinary form of concave cups; and, without the slightest shadow of proof, they are said to rest upon his 'transition rocks.' In p. 89, he mentions a '*columnar glance coal*,'* 'a little above Crawick-bridge,' which is to be observed passing into the 'graphite, but not so distinctly as near Cumnock in Ayrshire, where there is a graphite mine.' In his elaborate description of this *wonderful* phenomenon, we see nothing but what is very common in Scotland, where a dike or vein intersects the coal stratum. In such cases the coal is often found, to a considerable extent from the vein, reduced to a powder resembling graphite; and even where it remains solid, it is deprived of its bitumen. When this occurs the miners say the coal is *foul*, or that it is *diseased:* and from the change of quality in the stratum, they often know they are approaching a dike, long before the coal ceases to be solid. From this description, the unwary reader may be led to conclude that the whole stratum consisted either of graphite, or of *columnar glance coal.* But the fact is, that the stratum is the common splint coal, inclining to the caking Newcastle coal. Near the dike, the stratum approaches to plumbago. At a greater distance, a few scattered columns appear, without any uniformity, surrounded by a brittle crumbling coal, of the same quality. This coal, when heated to redness, emits neither flame nor smoke, and remains long unconsumed, though it does not possess the characteristic properties of good blind coal. It is, in fact what colliers call *foul* or *diseased* coal. At the distance of some fathoms, the coal becomes, in the collier's phrase, perfectly clean; that is, a bituminous, bright burning, and caking coal. The level of the coal on the other side of the dike is depressed about twelve fathoms. We have seen instances where the corresponding strata met on each side of a dike, at nearly the same horizontal level; and in such cases, little or no *disease* in the strata could be observed. But where the strata are much elevated or depressed, there is always a considerable extent of disease in the part, which is either thrown greatly up or down.

In p. 101, he characterises all the coal in Dumfries-shire, by the

* Our author formerly used the term *glance lead*, because it was English. In a note, p. 78, he explains the *glance coal* by the German appellation, *coal blende*. Could he not have called it *blind coal*, and then the people of Dumfries-shire would have understood his meaning.

the general name of *slate* coal, though it breaks with equal facility in all directions, and is intermediate between the splint coal of the Lothians and the caking coal of Newcastle. The cannel coal of Auchintaggart, near Sanquhar, is the only species known to us which can be called slate or schistic coal, because it divides into thin plates.

Having made these remarks on the very imperfect account he gives of the actual or existing coal formations, we shall proceed to the consideration of his *independent*, or rather *ideal* coal formations. The only coal fields at present known in the country, are at Sanquhar in Nithsdale, and Cannoby on the Esk. Our author, however, makes a great part of the country an *independent coal formation*, and is anxious to prove that the *reddish brown freestone*, which abounds in the country, covers coal, or that coal may be found under it. So intent is he upon his *independent coal formations*, that he never stops to inform us of a notorious fact, that no such freestone is known to exist in any of the coal fields that have yet been discovered.

In p. 81, after a 'careful examination,' he decides, without the smallest proof, that the red sandstone of Dumfries is not of the same formation with what he is pleased to call 'the old red sandstone of Cumberland,' and that the former 'belongs to the independent coal formation.' In support of his argument, he has recourse to Mid-Lothian, and points out the following places where red sandstone is asserted by him to exist in coal fields. 1. In Dryden water, near Loanhead. 2. Near the paper-mills on the Esk, continuing to Hathornden and Roslin. 3. At Collington. 4. At Craigmillar. 5. At Salisbury Craigs.

Our author is perpetually embarrassing this question by the authority of Werner, and other eminent German mineralogists. In p. 80. and 81. he represents Werner as showing some of their opinions to be false, and 'that the independent coal formation does not lie under the *old red sandstone* formation. But from what he states immediately after, it would seem that Werner thinks coal may be found under some newer red sandstone formations. We wish our author had specified the marks by which we might distinguish between these valuable new formations and the unproductive old ones. These Germans may have represented facts as they occurred in their own country; but as this is a question, in the decision of which, authority ought to have no influence, we hope to prove, by a reference to facts, that coal no where exists under red sandstone in this country, whether it be of new or old formation.

We must premise, that it requires an eye accustomed to observe these materials, to distinguish the red or reddish brown sandstone,

stone, which we deem very unfavourable to coal, from other sandstones, which are not unfavourable. We do not esteem a reddish yellow, or yellowish brown unfavourable, but the contrary; though these may be incautiously mistaken for the unfavourable sandstone. One discriminating mark of the latter is, that parts of a bed, or even entire beds, are interspersed with small rounded pebbles, and constitute that species of breccia, or puddingstone, to which our author assigns the name of amygdaloid. Other entire beds are composed of this, or of a coarser breccia. Now, though we would be understood to speak with considerable diffidence, we must state, that, as far as our experience extends, we never knew, or heard of, a single example of amygdaloid or breccia occurring in the strata that covered coal. We must farther remark, that the unfavourable sandstone often alternates with white sandstone, inclining to yellow, of a very fine grain, and well adapted for elegant architecture; but a single bed of genuine red, or reddish brown sandstone, interposed between these strata, appears to us highly unpropitious, if not fatal to coal, as far as that group of strata extends.

Having offered these explanatory observations, let us now attend to our author's proof of the existence of coal under the red sandstone of Dumfries, derived from the red sandstone of Mid-Lothian. From the parish of Borthwick, an irregular belt, or zone, of red sandstone, crosses part of the parish of Cairnton, and the parish of Laswade, between Roslin and the paper-mills. Its progress is nearly from south to north; and its eastern boundary is seen to run pretty regularly, until it intersects part of Craigmillar on the east; it then passes onward until it is lost somewhere near Portobello. Its western boundary runs along from Roslin, until it is intercepted by the eastern base of the Pentland Hills, and is lost, or covered, by the whinstone rocks projected from that base. From Portobello, this sandstone takes and irregular western course. It includes the Calton Hill, the ridge on which the old town of Edinburgh is built; and here the North Loch is the boundary between the red sandstone and the coal metals.

From the southern base of Edinburgh castle, the red sandstone occupies all the space between the north side of the Pentland Hills, and an irregular line drawn from this point, in a direction of west by south, nearly to Mid-Calder. In this tract there are some large inroads of the coal metals into the red sandstone, and several projections of the red sandstone into the coal metals: but a line east of the river Calder seems to form the boundary of the coal metals, from a little way above the town, to the western point of the Pentland Hills. The basaltic rocks

rocks of Corstorphine-Hill are seen, in some points, to rest upon the coal metals. But, farther towards the west, a range of red sandstone is seen to intersect part of the parishes of Corstorphine and Kirkliston, which terminates near Queensferry westward, and comes down to the sea eastward of the Hawes. Whether this be a detached range or an arm projected from the former, we shall not pretend to determine; though the latter seems most probable. The latter also projects another arm, westward, from Kirkliston through the county of Linlithgow, to the town of Linlithgow itself, and through part of Stirlingshire.

Our author (p. 167,) asserts that Craigmillar belongs to the coal formation, though it does not exhibit the most distant symptom of coal. Southward from Craigmillar, the red sandstone and the coal metals are frequently seen to meet, and to dip in opposite directions; and though coal is wrought on each side of the red sandstone which forms this zone, no particle of it was ever found in the red sandstone itself. Where the strata stand at so high an angle, and are cut so deeply by the North and South Esks, surely if there had been any coal in the red sandstone in question, it must have been exposed to view. The red sandstone mentioned at Loanhead is part of another range, which occupies the rising grounds for a great way towards the south. Though it has coal in its immediate neighbourhood, no particle of coal was ever found in the red sandstone itself.

In the same page, our author asserts, that 'Salisbury Craigs belong to the coal formation;' of which there is not the most distant symptom, though the strata are exposed to the depth of several hundred feet. The 'slate clay' he mentions in this rock, is commonly of a red colour; and the sandstone is mostly red, except the strata next the whinstone, and a few others.

From Salisbury Craigs and Craigmillar, this sandstone stretches through Canaan towards Collington. It occupies Bruntisfield links, and forms the basis of the ridge on which the old town of Edinburgh is built; as was lately made manifest by digging the foundation for the new bank buildings. At the North Loch, the coal-metals again appear; and the New Town is built on strata from which coal was formerly wrought. All the tract of country betwixt this part and the sea, having Portobello on the east, and an irregular line passing Almond Water, above Cramond Bridge, on the west, is founded on coal-metals.

In p. 166, our author says, that 'immediately behind the manse of Collington, there is a beautiful section of the coal-field.' These strata 'are of a reddish brown colour;' but though they are almost perpendicular, and are cut to a very great depth, did our author, or any other person, ever find coal

in them? The 'greyish black-coloured slate-clay,' does not occur behind the manse of Collington, but farther down, towards the Lanark road, where the coal-metals again appear; and here the sandstone is not red or brown; being either white, or grey, or blue, or yellowish. We may remark, that when dark-coloured clay schistus occurs in red sandstone, which very rarely happens, it commonly writes white, like roof slate. But the dark-coloured schistus in coal-fields, as it owes its colour to carbon and bitumen, commonly draws lines of its own colour, or nearly approaching to it.

In p. 108, 109, we are presented with an argument, which, should all our author has said about the coal formations of Mid-Lothian, fail in producing its effect, he thinks sufficient to force conviction on the most obstinate sceptic. 'In lower Silesia, the coal formation is composed of *thick strata* of *reddish brown sandstone*.' Strengthened by this argument, with much confidence, he concludes with a truism which no man will dispute, 'that the coal-fields of Mid-Lothian and Dumfries-shire, belong to the independent coal formation.' But as, under the term coal-fields, he evidently includes fields of red sandstone, we shall endeavour to prove, that coal does not occur in such fields, in any part of Scotland that is known to us. What may be the case in Silesia, we shall not pretend to decide; but as this gentleman has confounded the red sandstone of Mid-Lothian, which, though often contiguous, is never found to cover coal, with the other species below which coal is actually found, we cannot help suspecting he may have committed the same mistake with regard to the sandstone of Silesia.

In the county of Lanark, a broad belt of red sandstone runs northward from the parish of Kilbride. It occupies most of the parish of Blantyre, and part of the parishes of Cambuslang and Hamilton. Crossing the Clyde, it runs a long way through the parish of Bothwell, and throws out several arms. Though coal is wrought along the boundary of this sandstone, on each side, no particle of coal was ever found included in it. The district of Cunningham, in Ayrshire, is mostly composed of red sandstone; but, from Saltcoats to Irvine, there is a narrow tract of coast, in which there is vast abundance of coal, and the sandstone is such as usually covers coal. The boundary between these two species of sandstone, is marked with almost mathematical precision; and is usually distinguished by an opposition in the dip or inclination of the strata. In the red sandstone, no vestige of coal ever was observed. We might mention several other places in the counties of Lanark, Renfrew, and Ayr, where the coal-metals and coal come into immediate contact with red sandstone, without the latter containing a single particle

ticle of coal. We might also point out similar facts in the counties of Dunbarton, Stirling, Linlithgow, Clackmannan, &c. But we pass over to Fifeshire, where the strata, from the high angle they usually make with the horizon, are generally more exposed to view.

From Kirkaldy, to the west of Inverkeithing, red sandstone generally occupies the coast of this county; and there no coal is found. From Salun, on the north-west, a zone of red sandstone is projected towards the south-east, and for a great way occupies the summit of the county. Inexhaustible beds of coal are working on each side of it; and, after throwing out several arms or branches, the red sandstone comes down to the sea-beach between Easter and Wester Wemyss. Near Easter Wemyss, a very curious display is exhibited of the junction of the coal metals with the red sandstone, the latter seeming to intersect the former, like a dike or wall. But though coal is working in many places, both on the east and west of this red freestone, not the smallest vestige of this fossil was ever found in the red freestone.

Another range of red sandstone runs down from Kinross-shire, and occupies the valley between the Lommond Hills, and the northern hills of Fife. Near the northern base of the Lommond Hills, which are founded on coal-metals and coal, the white, grey, and yellow sandstone, are seen to meet the red, and their line of junction is distinctly marked. The red sandstone continues along the vale of Eden, by Cupar, to the sea; and though coal abounds along its southern margin, no coal was ever seen in the red sandstone itself. The sandstone of the counties north of the Frith of Tay, is mostly red; and in these counties there is no coal. In parts of Banff, Moray, and Nairne, white, grey, and yellow sandstone are seen, including beds of black bituminated clay, and affording indications of coal. In Sutherland, on the north side of the Moray Frith, where coal is found, the sandstone is white, grey, yellow, or blue, though red sandstone appears in other places, and exhibits no symptom of coal. Very thick beds of our author's alum-slate, rest upon the Sutherland coal, and seem well adapted for the manufacture of alum. Our author may perhaps call these 'transition rocks,' though they are evidently of the same formation with the coal.

From these, and many other facts that might be adduced, it appears evident, that red sandstone is, no where in Scotland, what our author calls a *coal formation;* but that it is very unpropitious, if not utterly fatal to coal. We suspect some mistake has been committed in describing the 'reddish brown coloured sandstone' at Repentance Hill, and Linbridge Ford (p. 96, 97,)

under which, thin seams of pitch coal were found. The yellow sandstone often assumes a reddish colour, from exposure to the air; and without an attentive examination, it may easily be confounded with the reddish brown sandstone, which is unfavourable to coal. If the gentlemen of Dumfries-shire are determined to sink or bore for coal in strata of this description, we strongly suspect, to use the phrase of that famous old miner, Dean of Guild Wightman, 'they may tickle the soles of the Antipodes' before they find 'thick and very extensive beds of coal.'

Hardly any new coal-fields have been discovered in Scotland since the Union. Most of our coal has been discovered by streams of water intersecting the strata: or, as the strata *basset* or *crop out* to the surface, by exploring their outcrops. The only case where this mode will not answer, are, where the strata are very flat, or where they draw to a thin edge towards their outcrops.

In note S (p. 169,) the occurrence of greenstone in the coal formation of Mid-Lothian, is announced with all the pomp of a new and interesting discovery. But in the account of the coal at Newcastle, drawn up by the Philosophical Society of that place, accompanied with coloured sections of the strata, this stone is accurately described, as forming beds in the coal-fields. The same stone is found in many of the coal-fields of Scotland, and is noticed by Williams; though neither the people here, nor at Newcastle, called it greenstone; but contented themselves with the more vulgar appellation of *whinstone bands.*

In p. 102, he alleges that 'the Edinburgh coal-field rests upon transition rocks.' This may be true, though no proof of it is offered. The late Mr. Williams computed the strata from the Brunston coal near the sea, up to Carlops, to be in depth above a mile of *coal-metals;* and it is presumeable they occupy a much greater depth.

In p. 118, we were very much surprised to find gravel classed among 'alluvial rocks.' We always understood a rock to be, either homogeneous, or composed of parts conglomerated or united together by cement. But it seems we were wrong, and Mr. Jamieson has found a class of rocks which 'differs from the other classes of rocks, in the want of connexion among its depositions, the looseness of the texture of the rocks of which it is composed, and the nearly total want of chymical precipitates. The number of its formations are also fewer.'

In p. 119, we are informed, that gold is found in the alluvial land, and 'was formerly washed for in the neighbourhood of Leadhills.' Our author thinks the gold is derived from his transition

transition rocks, and chiefly from quartz veins in these rocks. We are informed in a note, that 'in the reign of James V. three hundred men are said to have been employed for several summers, in washing for gold, and to have collected to the amount of 100,000l. Sterling.' We have been informed (though we cannot vouch for the accuracy of our information) that the average produce of each labourer varied from 3d. to 4d. a day, which was a considerable object when wages were only 2d. But after wages rose to 4d. the undertaking, as a subject of speculation, was abandoned, being no longer profitable; though it still continued to be occasionally prosecuted by some old men, who were fit for nothing else, even after wages exceeded 4d.

Upon the whole, it is perfectly apparent, that in place of a mineralogical account of Dumfries-shire, Mr. Jamieson has only been solicitous to find a vehicle for his newly acquired theory from the school of Freyberg. A less devoted disciple, indeed, would have measured the theory by the facts; but in the volume before us, the facts are made to suit the theory; and in what manner this reconciliation has been effected, it has been the object of this review to point out. Discovery there is none; for every thing stated in point of fact was known before. Nor is it likely that the good people, for whose information the work was intended, will recognize their own minerals, when described in such unintelligible terms, and adumbrated by the veil of an incomprehensible theory. The work never deviates into practical utility, nor do we recollect a single remark, from which the slightest good consequence can result; though there are many of a contrary tendency. The author indeed seems always to labour, and not without success, to render himself unintelligible; probably imagining, that the more he plunges out of the reach of ordinary capacities, the more profound he will be esteemed. Most of the facts in his book are derived from information, and not from his own observation; and he might certainly have drawn up such a work in Germany, without taking the trouble of returning home, or looking at the county of Dumfries.

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